EVALUATING AIR FORCE CIVIL ENGINEERS'

CURRENT AUTOMATED INFORMATION SYSTEMS

THESIS

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Abstract
Almost every organization has some form of information system where data is captured and stored for later use. The Air Force civil engineering organization is no exception and is in the process of transitioning from the Interim Work Information Management System (WIMS) to the Automated Civil Engineer System (ACES). This research focused on users perceptions of both database and data importance to determine if significant differences existed between various user sub-groups. The research also attempted to identify the most frequently reported problems regarding system usage. The methods of analysis of variance and content analysis were used to answer the research questions using survey responses from a sample size of 814. The results indicate that civil engineers slightly agree that their database and the data it collects are important. However, significant differences in perception levels were found between men and women, between some major commands (MAJCOMS), between users of different systems, and between personnel of different rank. Content analysis of comments in response to open-ended questions found that users are generally satisfied with their current system. However, areas of concern included slow system speed, lack of a user-friendly report writing feature, and poor reliability.

Subject Terms		
Civil Engineering automated information systems, Automated Civil Engineer System (ACES), Work Group Information Management System (WIMS), Interim Work Group Information Management System (IWIMS), Standardizing, Civil Engineering, Automated Information Systems (AIS)		

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INFORMATION SYSTEMS

THESIS

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Abstract

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The results indicate that civil engineers "slightly agree" that their database and the data it collects are important. However, significant differences in perception levels were found between men and women, between some major commands (MAJCOMs), between users of different systems, and between personnel of different rank. Content analysis of comments in response to open-ended questions found that users are generally satisfied with their current system. However, areas of concern included slow system speed, lack of a user-friendly report writing feature, and poor reliability.

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INFORMATION SYSTEMS

I. INTRODUCTION

According to Mr. Ronald Reagan, former President of the United States, "information is the oxygen of the modern age. It seeps through the walls topped by barbed wire, it wafts across the electrified borders" (36:1). Clearly, former President Reagan understood the power of information in today's technology-driven world. Any organization that does not organize and control its information will surely fail. This simple, yet often overlooked, axiom helps show that information drives the business of an organization. In other words, the basis of any organization is information. It does not matter if the information is a private address book or a Fortune 500 company's database of sales; an organized way to store and retrieve it is essential.

1.1 Design of Automated Information Systems

Almost every organization has some form of information system where data is captured and stored for later use. Once completed on paper ledgers, computers now accomplish these activities electronically and have resulted in increased worker efficiency as well as capability. The push for greater levels of efficiency highlighted the need for a standardized systems design process. The accepted process for creating software for handling data is called the systems development life cycle (SDLC). "The

SDLC is a complete set of steps that a team of database professionals, including database engineers and programmers, follow in an organization to specify, develop, maintain, and replace information systems" (32:45). The SDLC has "four fundamental phases: planning, analysis, design, and implementation" (8:3). There are many detailed variations of the SDLC, but the basic processes remain unchanged.

1.2 Air Force Civil Engineer Automated Information Systems

Many different types of organizations use systems designed according to the SDLC process, including the civil engineering (CE) organization on Air Force installations. Responsible for all the facilities and infrastructure owned by the government, civil engineers provide a wide range of services to the installation (e.g., fire protection, explosive ordinance disposal, military family housing management, military readiness training, disaster preparedness training and response, engineering services, construction management, operations and maintenance management, and environmental services). To perform these services, it is critical for the CE organization to efficiently manage its resources. The combination of efficiently managing resources and handling large amounts of data makes the CE organization a perfect candidate for using an automated information system (AIS).

In terms of efficiently managing resources, the CE organization is like most organizations in that it has a limited amount of resources and "making decisions requires trading off one goal against another" (30:4). Therefore, to make the most of a fixed amount of resources, an organization must increase its efficiency. The task of data collection is certainly no exception, as it requires the use of many of the Air Force's

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limited resources. Manpower is needed to operate the data systems and funds are needed to design, build and maintain the system as well as train the employees. In this respect, information systems can either help the organization by ensuring a greater level of efficiency and capability or hinder the organization because resources are spent on data that is not useful. For an AIS to increase the efficiency of the CE organization, it must consume less of the organization's limited resources or use them more efficiently.

In terms of handling large amounts of data, civil engineers are responsible for collecting and using a variety of data and information in their decision-making processes. The current Air Force civil engineering data system is the Interim Work Information Management System (IWIMS). This is the temporary version of the Work Information Management System (WIMS) that will be used until a replacement is fielded. Each functional part of IWIMS is being updated separately and will become an individual module in the Automated Civil Engineer System (ACES). Both systems will co-exist until ACES is complete.

The upgrade to ACES was necessary for many reasons. The most obvious reason is that IWIMS is a Disk Operating System (DOS) based program that needs to be updated to work in the current Windows based environment (27:1). Recent advancements in technology will also be used to increase the capability of the civil engineers' automated information systems. Originally, the Air Force had a contract with Martin-Marietta to design and create the ACES program. However, this contract failed to meet the Air Force's goals and the design of ACES is now being completed by the Air Force's Standard Systems Group (SSG) (31:1, 21:1).

1.3 Research Questions

To evaluate the Air Force civil engineers' current automated information system, a number of questions must be answered. These research questions are focused around the existing IWIMS and its replacement ACES. Therefore, this research focused on the development process for the ACES software and the information needs of the civil engineering community. In doing so, this research attempted to answer the following research questions.

1. How important are the current databases and associated data to civil engineers?

   1a. How are the constructs of Database Importance and Data Importance perceived in the CE community?

   1b. Are the perceptions of supervisors and employees significantly different?

   1c. Are the perceptions significantly different between MAJCOMs?

   1d. Are the perceptions significantly different between demographically separated groups (system used, rank and gender)?

2. Based on frequency of responses, what are the most significant issues reported by users?

1.4 Research Methodology

To answer these research questions, quantitative methods were used to evaluate information from a survey of civil engineering information system users. The majority of the survey data was collected via a web-based survey that measured two constructs, gathered demographical information, and asked three open-ended questions. The constructs were validated using factor analysis and Cronbach's alpha for reliability. Two-tailed hypothesis testing of means was conducted to see if statistical differences

existed between the constructs themselves and again between demographic groups. User comments were compiled by common subject matter and content analysis was used to organize these comments.

1.5 Scope of Research

This research only covered areas of ACES pertaining to the research questions. The scope of this research concentrated on the perspective of the civil engineer automated information system user. Users' views on database and Data Importance, as well as general comments for systems improvement, were targeted for collection. Analysis between groups was accomplished to locate any significant differences that may exist. This research did not intend to create interfaces between information systems or examine actual computer code.

1.6 Review of Chapters

Chapter II provides a summary of the current literature. It examines the current theories on information systems as well as the status of the systems used by Air Force civil engineers. Chapter II discusses the methodology used when answering the research questions and describes how the research questions were answered. Details such as how the survey was developed and administered are also explained. Chapter IV explains the results of the methodology when applied to this case. This includes using the statistical results of the survey and content analysis to answer the research questions. In conclusion, Chapter V summarizes the research results, discusses limitations, and makes recommendations regarding ACES and future research.

II. BACKGROUND

This chapter summarizes the current literature relative to this research. It reviews the fundamentals of information management systems, describes the systems development life cycle (SDLC), discusses the standardization of data and data systems, and provides information on the Air Force's civil engineering automated information systems. The purpose of this chapter is to provide the necessary background to fully understand the motivation behind the research.

2.1 Fundamentals of Information Management

2.1.1 Information and Technology

The need to collect, store and use information existed long before the computer age. In fact, primitive civilizations first used drawings as a way to store information. Cave dwellers used paintings to represent their information, which served to remind them of the ways of their ancestors. Creative drawings and paintings evolved to standardized characters that developed into written language. These languages were manually copied for thousands of years until the printing press and machines were used to reproduce text. Only recently have we been able to store information electronically on computers in the form of 0's and 1's in their own binary language.

Early computers filled whole buildings and were expensive to build. This limited their use to a select few, usually scientists. As time progressed, computers became smaller and less expensive and started showing up in everyday locations, such as

businesses. The growing use of computers started the demand for computer-based systems that could store and manipulate an organization's information; analysis and design of computer-based information systems subsequently began in the 1950s (25:11). The focus of these early design efforts was to maximize the limited computer resources to efficiently perform as many processes as possible. For example, the year was represented by only two digits as compared to four in an early effort to minimize memory requirements. This focus caused the Year 2000 problem, also known as the Y2K bug (25:11).

Although early design efforts focused on efficiency, there was a tremendous amount of duplication as each organization was independently designing their own systems. During the 1970s, as computers started becoming smaller, faster and less expensive; it was no longer economically feasible to develop a customized, one of a kind system. Therefore, the development of new systems started to become more standardized. Systems development became more structured and began to resemble engineering design efforts (25:11). With the introduction of microcomputers and off-the-shelf software, during the 1980s, information systems were available to employees at all levels in organizations. Human access to information transformed from line prompt interfaces to windows and icons. With this technological revolution, the focus of systems design has shifted to systems integration; computers are expected to network with other systems through an Internet or Intranet to exchange data across different platforms. As the technical components of information systems started to become standard, organizations focused their resources on the data these systems would collect.

2.1.2 Concepts of Data Collection and Information Management

Understanding the basic principals of data collection and information management is critical to any discussion regarding information systems. The first principal that must be understood is that information and data are not synonymous terms. Data is the smallest and most essential component of any system. It consists of the "raw facts about people, objects, and events in an organization" (25:12). An example of data would be customer account numbers or number of times a product malfunctioned. "Data that have been processed and presented in a form suitable for human interpretation" is defined as information (25:12). Information can often be used for "the purpose of revealing trends or patterns" (25:12). In summary, data are the raw facts stored in a computer-based information system and information is the product people extract from the system.

Before data can be collected and become useful information, the need for data must be clearly identified. Additionally, the type of data must be specified through the establishment of a data dictionary, which serves as the "repository of all data definitions for all organizational applications" (25:829). The data dictionary also explains the details of each data element in the database (32:602). Data integrity is the term used to define the possible values a data element can assume (32:259). Once the data integrity is established, the database can be defined. A database is a computer file where all of the data is stored. It can be located in the same computer where the data is entered or miles away on another computer system.

The interface between users who enter and retrieve data and the database is an automated information system (AIS). Implicit in any AIS is a set of business rules that

describe the relationships and boundaries between appropriate data. Business rules are typically defined to prevent processes from producing invalid responses. They can be explained as a "statement that defines or constrains some aspect of the business. [They are] intended to assert business structure or to control or influence the behavior of the business" (32:600). For example, a business rule would not allow a civil engineer to spend funds coded for maintenance on construction. Identifying appropriate business rules and developing the overall automated information system is accomplished through a formal analysis and design process.

2.1.3 Data and Databases

A database is defined as "an organized collection of logically related data" (32:4). This differs from data, which refers to the individual items that are collected and organized in a database. These items can consist of "facts, text, graphics, images, sound, and video segments that have meaning in the users' environment" (32:5). Finally, a database system (also known as an information system) represents the software that a user interfaces with to enter, retrieve, or manipulate data.

Databases have grown in both size and importance over the last two decades as many different types of clients, from businesses to governments and private citizens, have adopted their use (32:3). Consequently, a highly competitive market has been created for the use and development of these systems. In addition to inventory tracking and customer lists, information systems can provide analysis that is cumbersome to perform manually, thereby making them a tool for both managers and their subordinates.

The Air Force (AF) has recognized the power of data in the decision making process and has created the Installation Data Warehouse (IDW) program to "stockpile" the Air Force's data. Data warehousing is the "practice of taking data (e.g., cleaning them up, totaling them, aggregating them), and then sorting the data for [later] use" (8:342). The goal of the IDW is to provide AF-level decision makers "with integrated, timely, accurate, trusted, and secure information that is easily accessible anywhere in the world through the AF portal and supports all installations and logistics processes" (18:1). The IDW program is separated into three phases, with each phase being approximately one year in length.

The first phase, started in September 2001, is intended to perform a requirements analysis and develop a staging area known as the Operational Data Store (ODS) to store and normalize data. When the ODS architecture is established, it will begin receiving updates from data sources in the field and making standardized reports available via the AF Portal (18:1). In other words, the Air Force will create an electronic warehouse that will hold snapshots of a multitude of Air Force databases. The purpose of the second phase is to design and implement the data warehouse. "Processes will be implemented to aggregate and load the data warehouse via the ODS. Sophisticated analysis tools will be added to support data drilling and "what if" questions" (18:1). The third and final phase is to have this data available to answer high-level questions posed by senior staff members. "Phase III will add specialized data sources directly to the ODS and loads the transformed and aggregate data into the data warehouse" (18:1). When the IDW is operational, information collected at all levels throughout the Air Force can be analyzed

in real time. By having the most current information possible, decision-makers will be armed with the tools they need to make more difficult decisions.

2.1.4 Standardization of Data and Data Systems

Standardization of computer systems is important to any organization. The American Society of Testing and Materials Standards states that standardization ensures the development, maintenance, and distribution of databases are "easily accessed and utilized, and are responsive to users' needs and expectations with respect to quality, reliability, and degree of documentation" (2:1). To realize the benefits of standardization, a set of standards must first be established, and the first step is to define what the standards will govern.

For information systems, five different types of data standards are applied (8:75). The first type, documentation standards, ensures that all written materials look professional. This is also useful if workers change in the middle of projects or different sections of an organization work independently; documentation standards ensure a fluid final product. The next type of data standard, coding standards, ensures codes are easy to read and troubleshoot. Examples include items such as indention procedures and the use of standard commands. The third type of standard is procedural standards. This standard ensures the project progresses as scheduled by defining items such as approval levels and meeting schedules. The fourth type of standard, specification requirement standards includes program names or business rules that must be incorporated into the program. The last type of standard is the user interface design standards. This involves the manner in which the user interfaces with the computer, with examples including screen color and

the location of drop-down menus. A strong database administrative function is needed to enforce these standards once they are established; failure to do so is the "most common source of database failures in organizations" (32:22).

2.1.5 Database Reliability

Since organizations heavily rely on database systems to make critical decisions, reliability has emerged as an important criterion. "Between 1% and 10% of data items in critical organizational databases are estimated to be inaccurate" (26:169). A threat to database reliability are data processing errors, or errors made "when (1) recording data onto paper database forms, (2) recording errors into the database (referred to as keyboard errors) e.g. typographical and spelling errors and (3) recording errors, which are errors made when recording into the database, e.g., transpositions, omissions, or redundancies" (29:5). If a database is not user-friendly and does not meet the changing needs of the organization, it may be detrimental to daily operations. If users do not understand how to enter data or enter it incorrectly, decisions will be made on bad information.

2.1.6 Database Compatibility

In addition to reliability, compatibility is an important concept in today's information age.

> In a facility engineering process, large amounts of data must be communicated between different participants and computer applications across various life-cycle phases. Effective communication of this data is vital to maintaining work productivity, minimizing costs, and ensuring high engineering quality. However, communicating this data is often difficult because users (i.e., participants or applications) have different needs for the facility data and thus use different data representations. (34:1)

When more than one database collects similar information, organizations can improve efficiency by sharing data. To achieve this sharing of data, information systems must be compatible and standardizing is the first step to compatibility. "The lack of compatibility or standardization among many different indexing vocabularies and thesauri makes it difficult to find related information in information retrieval systems containing many different online databases" (3:1). Air Force Instruction 32-1019 relates the importance of civil engineering (CE) partnering with Communication and Information communities to promote "interconnectivity of automation systems" in addition to storing common data in "one logical repository" (16:3). To fully harness the advantages offered by compatibility, a standard system development process must be followed.

2.2 Systems Development Life Cycle

The traditional methodology used to develop, maintain, and replace an information system is known as the Systems Development Life Cycle (SDLC) (32:45, 25:24, 8:2). Designed to transform a business idea into a working and maintainable information system, the SDLC consists of four fundamental phases: planning, analysis, design, and implementation (8:3). In the information system (IS) literature, the phases are further divided into steps. The steps vary slightly depending on the literature source, but the fundamental phases are always the same. As shown in Table 1 (32:45), the steps are in a logical order and may overlap; thus, multiple steps may be worked on in parallel. At any time during the process, developers may revert to an earlier step if the results are not satisfactory (32:45). In this way, only steps that fail to meet the needs of the

organization must be revisited, and not the entire process. If this process is followed, the system will closely meet the organization's goals; an information system endeavor that does not follow a logical development schedule will cost more over the life of the system due to increased maintenance. Detailed discussion of the SDLC steps and fundamental phases is provided in the remainder of this section.

Table 1: The Systems Development Life Cycle (SDLC) (32:45)

SDLC step	Purpose	Deliverable
Project Identification and Selection	Preliminary understanding of the business situation that has caused a request for a new or enhanced system	Formal request to conduct a project to design and develop an IS solution to the current problem or opportunity
Project Initiation and Planning	State how business situation and how IS might help solve a problem or make an opportunity possible	Written request to study the possible changes to the existing system, or develop a new system
Analysis	Analysis the business situation thoroughly to determine requirements, structure those requirements, and to select among competing system features	Functional specifications for a system that meets user requirements and is feasible to develop and implement
Logical Design	Elicit and structure all information requirements	Detailed functional specifications of all data, forms, reports, displays, and processing rules
Physical Design	Develop all technology and organizational specifications	Program and database structures, technology purchases, physical site plans, and organizational redesigns
Implementation	Write programs, build data files, test and install the system	Programs that work accurately and to specifications, documentation, and training materials
Maintenance	Monitor the operation and usefulness of the system, and repair and enhance as needed	Periodic audits of the system to demonstrate whether the system is accurate and still meets needs

2.2.1 Planning Phase of the SDLC

The purposes of the planning phase are to understand why an information system (IS) is necessary and determine how it should be built (8:5). To understand the need for the IS, the using organization's objectives should be clearly identified. For example, is the system intended to cut costs, save manpower, or increase forecasting abilities?

Once clear objectives are determined, a feasibility analysis is accomplished to see if the information system (IS) can be built within budgetary limitations (economic feasibility), and technological constraints (technical feasibility). The feasibility analysis also determines if the using organization will be able to use the information system (organizational feasibility) (8:5). If the information system is determined to be feasible, a project management team can identify deliverable products.

In determining deliverables, the IS designer should determine if the system will follow a process-oriented or data-oriented approach. The traditional process-oriented approach concentrates on the "flow, use, and transformation of data" in its development (25:13). The main drawback of this method is the creation of several specialized files of data. For example, suppose a mechanic needs a customer's address for two separate processes: ordering parts and determining a work estimate. In the process-oriented approach, the customer's address would have to be entered twice, once for each process. In the data-oriented approach, the data is separate from the application that uses it; therefore, the customer's address would only have to be entered once. The data-oriented approach, also known as information engineering, is the "ideal organization of data, independent of where and how data are used within a system" (25:14). In other words, the database is simply a file that stores information; software applications provide the

interface with the user to collect and retrieve data. After the planning phase is complete,

the next step is to begin the analysis phase and develop the system.

2.2.2 Analysis Phase of the SDLC

The purpose of the analysis phase is to determine who will use the system, what

the system will do, and where and when the system will be used (8:6). During this phase,

an analysis strategy is developed to guide the development of the system by examining

existing systems, identifying improvement opportunities, and describing concepts that

will be incorporated into the new system. To initiate the analysis strategy, data on the

system must be collected (typically through interviews and questionnaires) to develop a

process model. This model specifies how the business will operate after the new system

has been integrated and contains all the tasks that the organization will perform to

accomplish its mission. The data that is used or collected during these tasks are then

extracted from the process model, and data that will be shared with other databases are

appropriately identified (25:28). The structure of the subsequent process model will

depend on how the designers choose to relate the data.

Information engineering identifies the major relationships between high-level

categories of data. This is usually done in a top-down fashion, going from the more

general to the most specific data (32:44). For example, if the organization were building

cars, a high level of data would be the type of car. The next level of data may depict the

car's brake system and the final level may represent the type of brake pads.

Alternatively, bottom-up development may be used in which the needs of the users drive

the database structure (32:44). In this method, the tasks the users performed are linked to

larger parts of the organization. Using the car example again, suppose the user has a few types of brake pads. The brake pads are then grouped according to the type of car in which they are installed. Regardless of the development hierarchy, a system proposal is submitted for approval to move the SDLC system from the analysis phase to the design phase.

2.2.3 Design Phase of the SDLC

The goal of the design phase is to determine "how the system will operate, in terms of hardware, software, and network infrastructure" (8:7). This phase also defines the "user interface, forms, and reports that will be used, and the specific programs, databases, and files that will be needed" (8:7). The first step in the design phase is to develop the design strategy, which will eventually describe the system architecture. The design strategy specifies the type of hardware, software, and network infrastructure to be used and how it compares to the existing architecture. The next step is to specify how users will interface with the system; examples of interfaces include menus and buttons. Finally, the design phase will identify programs that need to be written and their intended purpose (25:28-29). The products of the design phase are packaged together to represent the system specification for the implementation phase.

2.2.4 Implementation Phase of the SDLC

The implementation phase includes writing, testing, and installing programs that will be used to access the database; the programming language is also determined at this point. During implementation, the information system will be modified to correct any

problems that arise and satisfy user-requested changes. Once the system is fully

implemented, system maintenance must be accomplished throughout the remainder of the

system's life; this includes correcting errors; adding, deleting, or changing characteristics

of the database; improving speed or reliability; training new users; or incorporating an

interface with other programs (25:29).

There must be continuous improvement (mandated by DoD) to automated

information systems (9:21, 20:9, 16:1). The growing importance of data to mission

requirements dictates that these improvements must not be managed casually. However,

this is a significant problem in today's computer dominated world; too often systems are

implemented and not continually updated to make users more productive. Four common

characteristics of ineffective data administration, which leads to poor data utilization, are

described below.

1. Multiple definitions of the same data entity and/or inconsistent
   representations of the same data elements in separate databases, making
   integration of data across different databases hazardous.

2. Missing key data elements, whose loss eliminates the value of existing
   data.

3. Low data quality levels due to inappropriate sources of data or timing of
   data transfers from one system to another, thus reducing the reliability of
   the data.

4. Inadequate familiarity with existing data, including awareness of data
   location and meaning of stored data, thus reducing the capability to use the
   data to make effective strategic or planning decisions. (32:484)

2.3 Data Standardization in the DoD

2.3.1 Importance of Standardization

The Department of Defense also recognizes the importance of data standardization and the SDLC process. "Standard data is the cornerstone of the information infrastructure that supports the Warfighter and the overall mission of the Department of Defense" (9:14). Standard data is not only convenient to an efficient business but a necessity to perform daily mission requirements since it needs to be shared as accurately and quickly as possible between many different functional areas. "Standard data will enable the DoD to perform its missions in an integrated, effective, and efficient manner" (10:3).

In an effort to reduce costs while meeting the mission, the Department of Defense is no longer in the business of specifying one-of-a kind, highly technical requirements for new initiatives. Instead, emphasis is placed on searching for suitable products that currently exist. Standardization within the DoD is intended to achieve a greater level of efficiency while reaping the economic savings. Within the Air Force, a policy directive states that "the Air Force will participate in US private and public sector standardization activities to enhance the efficient use of resources and to achieve global objectives" (19:2). This philosophy is not solely a DoD one, as Congress passed it down.

> The Secretary of Defense, in compliance with the Cataloging and Standardization Act and related statutory requirements, established a single integrated Defense Standardization Program (DSP) to achieve the most efficient use of resources and efficient participation in combat, contingency and exercise operations with US Military Services and Allies. (20:1)

This policy directive is general guidance that expresses the trend towards standardization. Reasons for this movement include increasing support of allied operations, maintaining a world-class commercial industry and technology base, and promoting a robust American economy (19:1). Participation includes identifying and developing economic controls and criteria while harmonizing national military and civilian standardization needs.

2.3.2 Underlying Concept

The concept behind data standardization is "logically identifying, grouping and classifying data" (9:1). A DoD data model is the logical representation of data and includes how it is categorized based upon information requirements. In this model, data is reduced to its lowest terms to eliminate redundancy and standardize data element definitions (10:25). The data is then categorized by similar structure and domain. Data that describes the properties or characteristics of other data is called meta-data and is created by combining simple data fields (32:6, 8:196). The next level is class words, and this category designates where the data element fits. All data elements must fit into an existing class word or a new one must be created. A generic element can be created to establish the range of another data element but has no function of its own. Once all data items and the relationships are complete and standardized, the operating system can manipulate them as needed.

The data model structure prescribed above can be compared to simple chemistry. Suppose the data are specific elements on the periodic chart such as hydrogen or oxygen. Meta-data might be a water molecule made by combining one oxygen atom with two hydrogen atoms. The columns on the periodic chart can represent class. For example, if

a new noble gas were discovered, it would be placed in the last column of the periodic chart.

2.3.3 Database Goals

One of the DoD database goals is to create "standard data elements, data models, and data architectures to facilitate data sharing, data quality, reuse, single point-of-entry, and the integration of DoD databases" (9:1). In order to enhance the functional and operational efficiency of the DoD, a process analysis and design is necessary to ensure standardization. This DoD data standardization process, seen in Figure 1, is very similar to the SDLC reviewed earlier. The four steps of the SDLC (planning, analysis, design and implementation) can be compared to each of the four tasks shown in Figure 1. The data standardizing process is similar to the system development process, but on a much smaller scale, almost as if each data element was its own system. The first step of the SDLC is planning and is similar to the DoD step of identifying data requirements. While the SDLC is gathering requirements on the entire system, the DoD step is gathering requirements only on a single data standard. The next SDLC step is analysis, where the data is mapped and flows are established. Similarly, the DoD step of develop data standards "maps" the data standard for the data in question. The third step of the SDLC is the design phase where the system develops a physical design as well as establishes an operating architecture. The DoD step of approve data standards reviews the data standards and sets their "physical" design to determine the data standard. The last step of the SDLC is implementation, and it closely resembles the DoD step of implement data standards. This step takes the system or data standard and implements it in the current

operating environment. Once the system has been implemented, the SDLC process is not

complete. Under the implementation step, maintenance is always reviewing and

upgrading the system, as also mentioned in the DoD step that will improve DoD data

standards.

```
                      ┌──────────────────────────────┐
                      │      STANDARDIZE DATA         │
                      └──────────────────────────────┘
```

Identify Data Requirements	**Develop Data Standards**	**Approve Data Standards**	**Implement Data Standards**
Collect data requirements	Design data standards	Perform technical review	Register use of DoD data standards
Validate data requirements	Coordinate developmental data standards	Perform cross functional review	Transform logical data model to physical schema
Capture meta-data (data about data)	Submit proposal package	Determine data standard disposition	Refine database schema
Identify existing standards			Improve DoD data standards

Figure 1: Data Standardization Node Tree (10:22)

The Department of Defense delegates the specifics of data standardization to each functional community (10:10). Specific guidance contained in DoD manual 8320.1-M-1 "provides the procedures for developing, approving, implementing, and maintaining DoD data standards" and is summarized by the following objectives (10:21).

1. Develop and maintain a DoD Data Model (DDM) that depicts the DoD's information requirements.

2. Develop data standards from logical data models to promote interoperability among information systems, operational forces, and the DoD functional areas in support of military missions throughout the DoD.

3. Control data redundancy.

4. Reduce the cost and time to develop, implement, and maintain systems.

5. Enhance information system interoperability by reducing the requirements to translate and transform data.

6. Provide for the uniform description and representation of data.

7. Improve data integrity and accuracy.

8. Document approved standard data in a single DoD data dictionary.

9. Use applicable international, national, and Federal standards where appropriate.

To implement these objectives, the relationship between the data collected by the information system and the existing data standards must be captured. This is accomplished by mapping the data collected by the information system to their respective standard data elements to establish a baseline against which progress can be measured. This baseline helps improve "data sharing, data interchange, and our ability to get the correct information to the Warfighter at the right time" (10:76). It also improves system integration, data quality, and utility.

Establishing standardized data is critical to Command, Control, Communications, Computers and Intelligence (C4I) interoperability goals. These C4I For The Warrior (C4IFTW) goals have driven the establishment of over 15,000 data standards stored in the Defense Data Dictionary System (DDDS) (10:5). These goals are the central theme of the DoD data standardization initiative and emphasize the importance of information to the Warfighter in maintaining mission readiness, improving reliability, and enhancing effectiveness through technological superiority (10:5).

2.4 Air Force Civil Engineer Database Systems

2.4.1 Civil Engineering Background

A civil engineering organization is responsible for the design, maintenance, repair and safety of roads, utilities, and facilities on Air Force installations; in other words, it is responsible for all "non-moving" parts of the installation. As shown in Table 2, a typical civil engineering unit contains many functional areas with varying responsibilities.

Table 2: Civil Engineering Organization Structure

Functional Area	Description of Responsibilities
Command Section	Unit commander and unit administrative duties
Engineering	Plans, designs and executes facility construction and repair
Fire Protection	Protects from fire as well as manages hazardous material accident response
Operations and Maintenance	Maintains all facilities and infrastructure on the installation
Environmental Services	Ensures compliance with environmental policy as well as reducing pollution and cleaning contaminated sites
Military Housing	Manages installation housing assets
Explosive Ordnance Disposal	Provides explosive relief services to the installation and local area
Readiness and Disaster Preparedness	Trains personnel of military skills as well as disaster preparedness training and response
Resources	Manages base property assets as well as CE finances, manpower and equipment

2.4.2 Database Evolution

The original civil engineer automated information system was the Base Engineer Automated Management System (BEAMS) implemented in the early 1970s (22:1). As a result of Defense Management Review Decision (DMRD) 924 and the Air Force Program Management Directive (AFPMD) 2208 in the early 1990s, Air Force organizations were mandated to centralize all computer systems. This task was impossible for the BEAMS system because each installation had its own system that could not be centralized. This led to the creation of the Work Information Management System (WIMS). Until WIMS was fully operational, there was a transition period during

which WIMS interfaced daily with BEAMS to share information. In 1995, WIMS became the Interim Work Information Management System (IWIMS) when it was transitioned from a WANG minicomputer to a UNIX client-server. "This transition was necessary to migrate the WIMS software from a proprietary system to what is termed as an open system architecture" (22:1). Similar to the BEAMS/WIMS overlap, there was another transition period in which IWIMS and WIMS coexisted.

Currently, the civil engineer community is transitioning from IWIMS to ACES. This was inevitable as the technological advancement of the desktop computer made the IWIMS obsolete in a matter of years. Not only was it running on the outdated Disk Operating System (DOS), but it also lacked the features made common in spreadsheets like Microsoft Excel. Additionally, ACES will eliminate the WIMS "flat-file" (non-relational) database and replace it with a true relational database. The main advantage of a relational database system is its ability to ensure "values linking the tables together through primary keys are valid and correctly synchronized" (8: 340). This will improve both accuracy and efficiency by not allowing the user to enter invalid responses to data fields.

2.5 Automated Civil Engineer System (ACES)

2.5.1 Background

The future of the civil engineer automation modernization program is to standardize information so that it is immediately available to users upon being entered into the database system. "ACES will operate in a real time, structured query language (SQL) compliant relational databases" to be accessed by anyone needing the information

worldwide (13:1). The ACES system is being implemented in phases called modules

with each module designed for a specific functional area in the civil engineering

organization as shown below.

- Engineering: Project management and programming, design and construction (Released as ACES-PM)
- Environmental: Environmental security and management
- Housing: Military family housing (Released as ACES-H)
- Resources: Real property and financial management, CE material acquisition system (CEMAS) (Real property function released as ACES-RP)
- Operations: Work control and facility management operations
- Fire: Incident response management including hazardous materials (HAZMAT) (Released as ACES-FD)
- Readiness: Personnel training and readiness equipment management

Figure 2 shows the status of each module. The real property, project management and

housing modules have been implemented and are running at most installations. All other

modules are still in the definition or development and testing phase. As each module was

implemented, representatives from each Major Command (MAJCOM) were trained and

sent back to train the users before the ACES was operational (31:1).
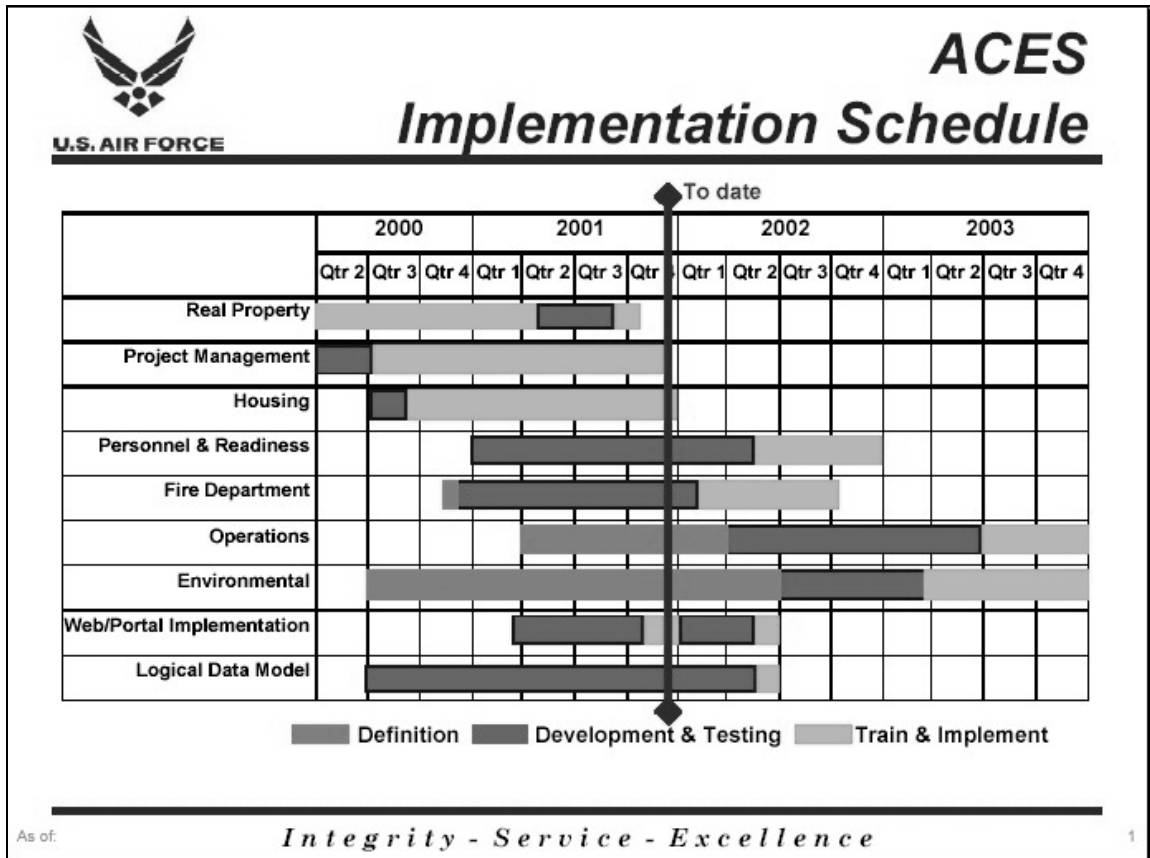
Figure 2: AFCESA's ACES Implementation Schedule

The ACES Real Property (ACES-RP) module was the first to be implemented because of requirements imposed by the Chief Financial Officers (CFO) Act of 1990. This act was a mandate for federal financial management reform since years of audits showed most government systems were not up to present standards and could not meet the expectations of the using organizations (11:1). The Air Force used ACES-RP to meet the CFO's requirement to implement "agency asset management systems, including systems for property and inventory management and control" (38:1). As the ACES-RP

was implemented, it underwent over 25 updates in the first year as problems were identified.

2.5.2 Responsible Organizations

The organization in charge of ACES is the Air Force Civil Engineer Support Agency (AFCESA) located at Tyndall Air Force Base, Florida. Established in 1966, AFCESA's mission statement is to "provide the best tools, practices and professional support to maximize Air Force civil engineer capabilities in base and contingency operations" (14:3). AFCESA is thus involved in every facet of civil engineering, with the development of automated systems being the responsibility of the Operations Support Directorate. This directorate controls the definition, development and implementation of "the next-generation civil engineer automated system, featuring telecommunications connectivity and stare-of-the-art information management system for worldwide support of civil engineer operations" (14:12). Specifically, the Technology Integration Division of the Operations Support Directorate is the point of contact for the development of ACES. Their focus is to "increase base Civil Engineer capabilities through enhanced integration of modern technology, mission-oriented software systems, program management expertise, and providing reliable, valid and timely information to the Warfighter" (12:1).

Headquarters Standard Systems Group (SSG), located at Maxwell Air Force Base-Gunter Annex, Alabama, is responsible for writing the ACES program based on AFCESA's guidance. The main role of SSG is to manage information technology contracts and standard information system programs commonly used at all active and

reserve Air Force bases and many DoD agencies. In addition to ACES, the Standard

Systems Group manages more than 100 standard information systems for the Air Force in

many different functional areas.

> SSG is responsible for acquisition, development, and sustainment of secure
> combat support information systems, and provides data processing and
> communications computer systems and capabilities to major commands and Air
> Force bases around the world. SSG's Software Factory develops, obtains and
> sustains combat information systems that are compliant with the defense
> information infrastructure. The factory supports air and space operations at Air
> Force bases worldwide, and provides network monitoring and technical support to
> commanders at all levels. (21:1)

2.5.3 Governing Guidance

The primary Air Force guidance, based on public law and DoD directives,

regarding the management of civil engineer automation is Air Force Instruction (AFI) 32-

1019. First implemented on 1 January 2001, this AFI directly relates to the ACES

software. It "establishes organization related responsibilities for providing oversight,

technical review, and functional area expertise for defining, fielding, and training civil

engineer data automation tools" (16:1). The AFI outlines many tasks that are to be

accomplished in any civil engineer data automation system and mandates that "standard

business rules will be engineered into the database" (16:1). The business rules are to

provide maximum compatibility between installations and headquarters units.

The actual process of turning civil engineer tasks into data fields started with

identifying specific processes that needed to be accomplished. These processes were

flowcharted and relationships were developed (31:1). From these relationships, the

Standard Systems Group (SSG) used this information to develop a relational database.

These steps are consistent with standard systems design with one exception: the

relationships were defined from the AFI and there does not seem to be any fundamental business changes incorporated in them. A more effective method may be to take the essential tasks, mandated by law and executive order, and build the system accordingly instead of duplicating the functions of the old system.

Air Force Instruction 32-1019 also created three organizations to manage CE information systems automation: Automation Steering Group (ASG), Configuration Control Board (CCB) and an integrated process team (IPT) for each module. The Automation Steering Group provides strategic direction and approves the use of funds. It also defines the CE automation systems to include all related software, hardware and communication infrastructure. The AFI specifies that software must have a web-based design to minimize licensing costs and maintainability (16:3). If data is used by more than one organization, the information should be stored in one database. The AFI also stresses the importance of worldwide interconnectivity of automated systems. To meet the requirements specified by the Air Force guidance, ACES must be designed to interface with the following systems (13:3).

- IWIMS-Interim Work Information Management System
- PDS-Personnel Data System (through IWIMS)
- SBSS-Standard Base Level Supply System
- JOCAS-Job Order Cost Accounting System
- BCAS/SPS-Base Contracting Automated System/Standard Procurement System
- GAFS-General Accounting and Finance System
- MILMOD-Personnel System (after IWIMS is turned off)
- AFIP-Automated Facilities Information Program (after IWIMS is turned off)
- MDS- Manpower Data System (after IWIMS is turned off)
- LOGMOD- Logistics Module (after IWIMS is turned off)
- MITS-Medical Information Training System (after IWIMS is turned off)

The Configuration Control Board responsibilities are limited to ACES. The purpose of the CCB is to be "the technical arm of the ASG. The CCB provides tactical direction; collects and defines functional requirements; reviews, and recommends or approves all Air Force CE-Wide Automation projects" (16:4). The functional working group representing the CE community, and the third organization created by the AFI, is the Integrated Process Team (IPT). "The IPT is responsible for ensuring system requirements are defined to include critical user needs, compliance requirements, system integration with non-CE systems, and training requirements" (16:4). A separate IPT will be created for each ACES module.

2.5.4 Compliance with Standards and Guidance

As stated in AFI 32-1019, "to preserve the integrity of Air Force CE data, the ACES database will be a single logical, relational database. Strict compliance with DoD manual 8320.1-M, *Data Administration Procedures*, is required when interfacing data into/from the ACES database." All ACES databases were developed by SSG; furthermore, all ACES modules will be written by SSG, except for the Operations module. This module will be adopted from an existing commercial off the shelf (COTS) program after the operations Integrated Process Team (IPT) evaluates different software programs to ensure the needs of the Operations Flight are met. According to KPMG Consulting, a private consulting firm under contract to Headquarters Air Force Material Command, the ACES program and database comply with existing technical standards.

Although the technical standards were followed, ACES does not currently comply with all of the Air Force guidance. The main disconnect is with compatibility, which

requires all data that is "common to more than one function or application should be shared by these functions and kept in one logical repository" (16:3). Currently, each ACES module has its own database and information is not yet shared with the other modules (27:1). As ACES develops, compatibility will increase the efficiency of the civil engineer by reducing the amount of information that will need to be input and increasing the amount of information available for retrieval. With a reduction in the amount of manual data entry and duplication of data, the accuracy of the database will increase. This will allow leaders to make informed decisions, with more accurate data, on a daily basis. This problem has been identified and is in the process of being fixed by combining similar data into one database to comply with the AFI (27:1). However, there are also problems with updating the logical data model; these problems include similar data with different names and the security of who has access to manipulate data that is shared among different parts of the organization. Table 3 lists some of the information systems, shown by functional area, that need to share data with ACES.

Table 3: Interacting Information Systems (27:1)

Support Services	Property Management	Financial Management	Environmental Management	
CMOS	ACES-HM, RP,	ABIDES	ADAM	GIS
ETMS	PM, FD	CBAS	AFRIMS	Hazmat on
FAS	CAMS	CMS	APIMS	the Web
HAF-AF	DUERS	DCPSGAFS	ACES	Haztrack
OLVIMS	EMIS	(BQ)I&S BED	Bird Hunting	HMIS
EMIS	ICI	JOCAS II	Bird Invest.	IMMS
Peoplesoft-	Peoplesoft-	MicroBAS	Birds	LBP
Arnold	Arnold	MILPERS	CCS	Submittal
SBSS	WIMS/IWIMS		Compl. Mgt.	Logs
SFRIMS			DB	PCB
SIMS			CSI	Database
TOPS			HMMS	Pest Mngt.
			ECAMP	Peoplesoft-
			EMMA	Arnold
			EMIS	Starship
			EQ Database	SWARS
			WITS	Tanks 3.1
				Tortoise
				Training

The chart shown in Figure 3 demonstrates the complexity of information system interaction. Information systems can benefit from sharing information, thus increasing efficiency as well as effectiveness but usually at the expense of processing speed. Currently, ACES has limited connections to other systems. The main data exchange is with IWIMS, as half of the civil engineers still use this system. Increased interactions mean increased quantities of data that will be transferred in the information systems hardware and thus a slower speed.
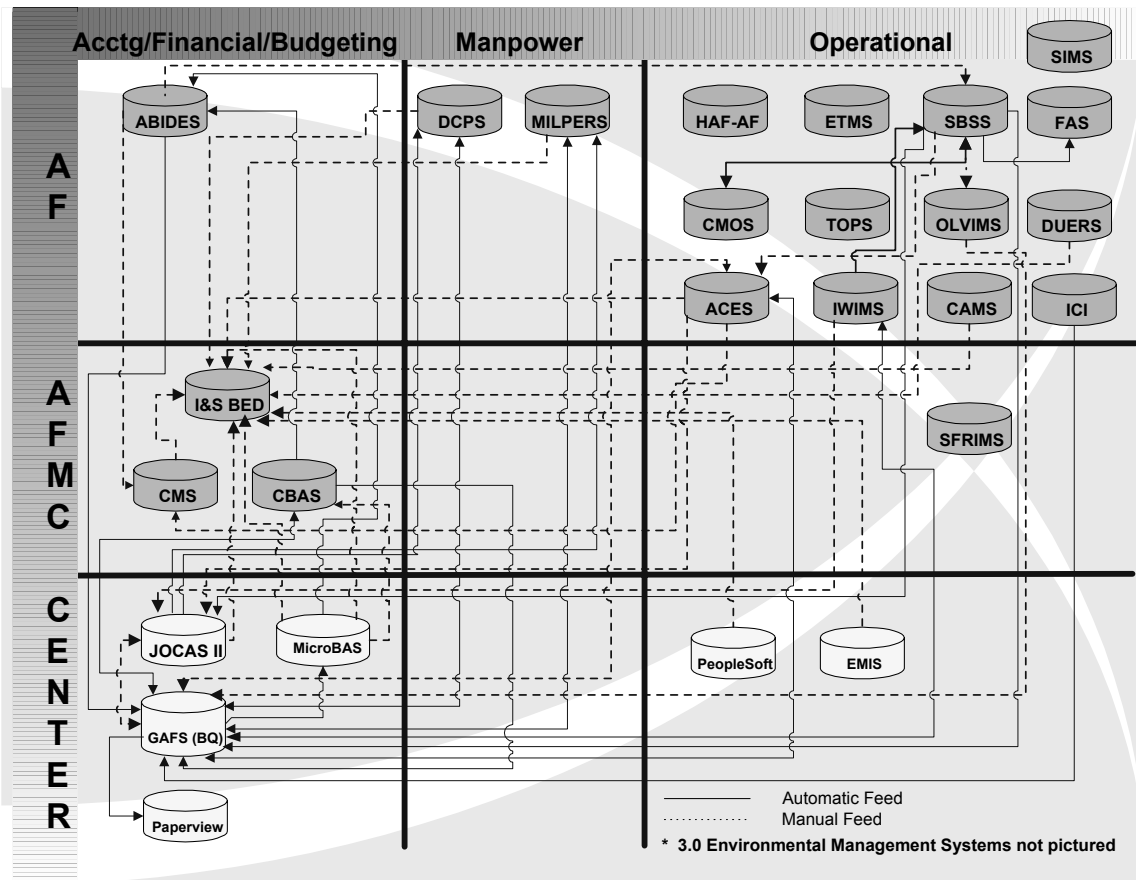
Figure 3: Example of System Interconnectivity (27:1)

2.5.5 Planned ACES Upgrades

As the ACES modules are implemented, updates are routinely needed; for example, changes to the ACES-PM module are already in progress. As of December 2001, the ACES-PM IPT had identified the 19 recommended changes shown in Table 4. The full description of these recommendations can be seen in Appendix C.

Table 4: ACES-PM Proposed Modifications (31:1)

Recommendation	Description
Grey out areas that are controlled by user rights	This will allow users to immediately know what fields they have the authority to update.
Copying Projects	To save time and increase accuracy, a better copy feature is needed. This is especially useful for IDIQ projects because most of the base contract information is identical.
User Preferences on Directory Screen	This will allow the user to tailor the system to fit their job. In this way, information can be displayed in a way that suits their specific needs.
Project Quick Add	Establish a connection between real property codes and projects. Create a visible description of the category codes.
Programming Tab	Update categories that are missing such as demolition.
Facility Investment Matrix (FIM)	Link FIM project prioritizing matrix and clearly define FIM ratings.
Contract Mgmt Tab in Projects	Add contract number and other missing data in the contract management section.
1391s	Update DD Form 1391 and fix deficiencies
Project Milestones Area	Add milestones to projects as well as automatically updating award status from contracting.
Indefinite delivery indefinite quantity (IDIQ)	Upgrade IDIQ features to better capture delivery orders (i.e., Paving, Carpet, Roofs).
Multiple Updates (Further Defined)	User defined, customizable, prioritized lists needed for civil engineering work and their status.
Design	Add options such as design-bid-build.
Project Managers Area	Add features such as personnel lists.
Discoverer	Training needed for report writing capabilities. Possible web-based demonstration.
Prioritize Projects	Add wing priority numbers to projects.
Funding Tab in Projects	Ad Purchase Request number to this tab.
Project Uniques Area	Allow more flexibility for the user to collect specific data in blank fields.
Capital Letters	Capitalize certain fields.
IPT Considerations	Future IPT tasks, to include updating business rules and including additional costs (i.e. communication work done to projects).

In addition to the specific ACES-PM changes scheduled, all ACES users have been forced to switch from client ACES to web ACES. For client ACES, the application is located locally at the installation as compared to web ACES where users access ACES through the web. Web ACES complies with the ever-increasing standards to move

towards a web-based system but this also greatly increases access time. Web ACES

users are located all over the world and must pass through firewalls to connect to the

central location. The Automated Steering Group (ASG) has been tasked to resolve this

issue. A test program is in development to pinpoint the bottlenecks and resolve them.

Other problems include the hardware infrastructure of aging servers, low-capacity low

data transfer lines, and the trend to transfer larger data files such as digital images. In

addition to transferring this information, it also must be stored for future use.

2.6 Private Business Capability

With aerospace technology, the private industry looks towards the Air Force to

commercially develop cutting edge technology. In the world of information systems, the

opposite is happening. According to an expert working on the GeoBase information

system at Headquarters Air Force, the average time to implement an information system

is 8 years (7:1). Commercially, the current outside business time to implement similar

systems is between 3 and 9 months (27:1). The process from concept to operation needs

to be evaluated on a large scale to identify the bottlenecks.

Another process ACES could learn from the private market is the use of online

analytical processing (OLAP) tools. These "smart" tools can suggest improvements to an

organization's processes by recognizing patterns that might be missed by managers; for

example, the system could recognize that reoccurring purchases can be grouped for a

bulk discount (27:1). These tools look at "what if" scenarios based on the day-to-day

operations of the organization.

Commercial software is available that procure materials and their pricing directly from local vendors (27:1). Large vendors like Home Depot can receive these electronic orders and make daily deliveries at a discount. The amount of savings for the Air Force can be substantial when you eliminate the facilities and resources required to stock, man, and maintain material warehouses such as the self-help store. ACES can be configured to take the information directly from the work order and include the materials needed for delivery (27:1).

2.7 Chapter Summary

The literature review was necessary to gain an understanding of the fundamentals of information management systems, basics of their design, development and implementation, and associated standards. The background of the civil engineer and the information systems used in recent history was summarized. The roles and responsibilities of the many organizations involved with ACES were described. Cooperation between organizations is necessary for success because large-scale software systems are "far beyond the ability of any individual or small group to create or even to understand in detail" (28:1). As with any large-scale operation, problems will arise; the methodology used in this research concentrated on how to capture the views of the information system users in the field to more effectively improve the systems they use.

III. METHODOLOGY

This chapter explains the methodology used to answer the research objectives posed in this study. After the previous chapter's literature review was completed, the research design was selected to best support the original research objectives. This chapter also explains the methodology behind the survey, to include its development and administration. Analytical statistical methods were used to relate the survey responses to the objectives. In addition to statistics, content analysis was used to categorize the text responses of the survey.

3.1 Research Design

The literature review verified that Department of Defense (DoD) and Air Force (AF) regulations and standards exist for an automated information system (AIS). The focus of the research questions was to capture the views of the Civil Engineering AIS users. This was accomplished with quantitative, correlational, cross-sectional research using a survey as the means to collect data (24:265). The research objectives were introduced in Chapter I and are explained below in Table 5.

Table 5: Research Questions

Research Question	Description
1. How important are the current databases and associated data to civil engineers?	*The focus of this research question is to capture the views of the civil engineers in the field and will be answered with 4 sub-questions.*
1a. How are the constructs of Database Importance and Data Importance perceived in the CE community?	The two constructs measured helped explain how important a role these information systems currently play.
1b. Are the perceptions of supervisors and employees significantly different?	This tested the perceptions of supervisors and employees to determine if they are similar or different using a hypothesis test of means.
1c. Are the perceptions significantly different between MAJCOMs?	This tested the perceptions between MAJCOMs to determine if they are similar or different using a hypothesis test of means.
1d. Are the perceptions significantly different between demographically separated groups (system used, rank and gender)?	This tested the perceptions of users separated by demographics to determine if they are similar or different using a hypothesis test of means.
2. Based on frequency of responses, what are the most significant issues reported by users?	*The focus of this question is to capture the comments of the users in the field and categorize them using content analysis.*

The first research question used the constructs of Database Importance and Data Importance to capture the views of the civil engineer automated information system (AIS) users in the field. Each construct was initially measured with six equally weighted questions to produce "more reliable measures than would any single item" (24:100).

> The most common method for creating a composite score in social research simply sums the responses to items composed with Likert-style wording. A Likert item consists of a statement (for example, "I am healthy") followed by a number of possible levels of agreement (for example, from "strongly agree" to "strongly disagree"). If the item had seven possible levels of agreement, the respondent would receive a score between 1 and 7. (24:100)

The construct of Database Importance measures the users' perceptions regarding the importance of the information system they most commonly use. The questions used to measure this construct, measured on a seven point Likert scale, are listed below along with their question numbers, and variable names, from the survey located in Appendix A. Higher scores indicate that the database is an integral part of the user's job. Conversely, a lower score indicated that the database is not a main part in the individual's daily tasking.

4. (Database 1) The Civil Engineer Database is an important part of my job.
5. (Database 2) The Civil Engineer Database helps me do my job faster.
6. (Database 3) The Civil Engineer Database is a useful tool for my use.
7. (Database 4) The Civil Engineer Database is a tool I use frequently.
8. (Database 5) The Civil Engineer Database I use cannot be improved much.
9. (Database 6) Without the Civil Engineer Database my job would be much harder.

The construct of Data Importance measures the users' perceptions regarding the importance of the data that is collected. The questions used to measure the Data Importance construct are listed below along with their question numbers from the survey. A higher score indicates that users feel the data is important, or a useful tool in accomplishing their duties. A lower score indicates that users feel the data that is collected is more of a burden than a tool.

10. (Data 1) The data that is collected helps me do my job.
11. (Data 2) The correct data is collected for the tasks I complete.
12. (Data 3) All the data collected is used.
13. (Data 4) All the data that I need is collected.
14. (Data 5) The data collected is used frequently.
15. (Data 6) I enter data frequently.

The database and data variables represent the two constructs measured in this research and were computed by averaging the responses from the six respective questions as shown below.

$$Database = \sum_{i=1}^{6} Database_i \qquad\qquad (1)$$

$$Data = \sum_{i=1}^{6} Data_i \qquad\qquad (2)$$

3.2 Research Validity

Validity must be checked to ensure the research is measuring what is intended. The threats to validity for this quantitative research focus on the two constructs of Database Importance and Data Importance. The four types of validity are Construct, Internal, Statistical Inference, and External validity; furthermore, these types of validity should be evaluated in that order (24:267).

Construct validity determines if the "variables in the study reflect the intended constructs" (24:270). In this research, the construct validity for the two constructs, database and Data Importance, was ensured by careful definition of the survey questions; statistical means, described later in this chapter, were also used. Each question was reviewed to ensure the focus was on the intended construct of either Database Importance or Data Importance, was as short as possible, and was worded simply and clearly as to prevent ambiguous interpretation (1:98).

Internal validity is usually checked once construct validity has been ensured. Internal validity answers the question, "Are the observed effects due only to the studied

causal variables, or could they result from other causes?" (24:271). Even though the variables in this study were not causal, internal validity must still be verified by examining plausible rival hypotheses for validity. For example, the survey questions that measured the Database Importance construct were reviewed to ensure they could not be mistaken for another construct such as Job Importance.

Statistical inference validity answers the question, "Could the results in favor of the hypothesis be due to sampling error?" (24:271). In this research, the hypothesis states that the means of the constructs are statistically equal between sub-groups such as gender or Major Command (MAJCOM). The sample must be selected in a way that minimizes the possibility of the results happening by accident. This can be done by selecting the correct sample size and interpreting the results with the sample size in perspective. Inferential statistics were used to limit the possibility of an erroneous result. Even if the minimum sample size is met, the possibility remains that a large sample may show a trivial relationship to be significant. To avoid this, judgment was used based on the type of design and specific measures used in this research.

The final validity check is to see if "the findings generalize to people, places, or times not sampled in this study" (24:271-272). This is known as external validity. The best way to test for external validity is to repeat the tests and compare results in a different sample group. For example, the survey developed for this research could be administered to an automated logistics information management system and results could be compared. In this research, only one sample was selected; therefore, external validity was not tested.

3.3 Survey Development and Administration

3.3.1 Survey Development

In the survey development phase, the primary goal was to capture the views of the civil engineers concerning current automated information systems. The first step in creating the survey was to define the constructs to be measured. The two latent variables measured in this study are Database Importance and Data Importance. All the other constructs consist of measured variables that were used to make comparisons between groups. Table 6 lists and explains the variables that were used in the survey.

No existing questions or measures were found that capture the constructs of Database Importance and Data Importance; therefore, new questions were created. "Effective survey questions have three important attributes: focus, brevity, and simplicity" as stated in *The Survey Research Handbook* (1:98). This handbook was used to build the questions contained in the survey and to avoid common pitfalls. The Likert scale was chosen because of its advantages of "flexibility, economy, and ease of composition" (1:134). People are familiar with this scale and can concentrate on the questions being asked.

Table 6: Survey Constructs

Database Importance (Latent Variable)	This construct concentrated on the program (ACES) as a whole and how it fits into daily tasks. How Important is the database to their job, how often do they use the database? Questions 4, 5, 6, 7, 8, 9
Data Importance (Latent Variable)	This construct will on the specific data that is collected and used in daily tasks. How important is the data they collect, how often do they use the data? Questions 10, 11, 12, 13, 14, 15
Status	Supervisory level was used to compare groups. Question 2
AIS used	Specific program was used to compare groups. Question 16
Comments	Comments on AIS used. Questions 17, 18, 19
Gender	May be used to compare groups. Question 20
Age	May be used to compare groups. Question 21
Duty	AFSC or OS may be used to compare groups. Question 22
Rank/Grade	May be used to compare groups. Question 23
Flight	May be used to compare groups. Question 24
Base	May be used to compare groups. Question 25
MAJCOM	May be used to compare groups. Question 26

The 26-question survey is broken up into 4 parts. The first few questions ensure the survey taker is using ACES or another civil engineer database and should be taking the survey. The next portion of the survey contains Likert-type questions using a seven-point scale to measure Database Importance and Data Importance. The third portion consists of open-ended questions designed to collect users' general comments. The fourth portion of the survey measures demographic data to compare groups.

3.3.2 Survey Administration

Each survey given to active-duty Air Force personnel must be submitted to the Air Force Survey Branch at the Air Force Personnel Center (HQ/AFPC/DPSAS) for approval per Air Force Instruction 36-2601 (17:1). On 5 January 2002, the survey for

this research was approved and received Survey Control Number (SCN) 02-005. The survey was subsequently published on the World Wide Web (WWW). A computer-based survey was chosen because of the speed of delivery and automatic compilation of the results. This saves time and eliminates errors associated with manually translating the survey results to a spreadsheet for analysis.

3.3.3 Survey Population and Sample

The population of concern consists of automated information system (AIS) users within the civil engineering community; however, these systems are currently used by a select few in a typical civil engineering unit. Therefore, it is easy to define the population but hard to delineate individual users. Currently there is not a database that lists current AIS users and their systems; therefore, an effective, but not the most efficient, way to find AIS users was to query the entire Air Force Civil Engineer officer population. Officers, targeted because they supervise the majority of AIS users, were asked to forward the survey to all AIS users in their civil engineering unit. The current rank distribution of Air Force civil engineering officers, excluding general officers, is shown in Table 7, which is taken from the Air Force Personnel Center's database as of 30 November 2001 (15:1).

Table 7: Current Active Air Force Civil Engineer Officers

2LT	1LT	CPT	MAJ	LTC	COL	Total	Men	%	Women	%
209	225	393	240	202	66	**1335**	1180	88.4	155	11.6

Since the sample size is affected by unknown factors such as the sampling variability, researchers often select a sample size as large as practical (24:132) and use statistics to calculate a guess or magnitude of the sample size (24:132, 33:32). Since the population size of AIS users is unknown, it will be estimated at 10,000. This is a conservative estimate that considers the approximate officers to AIS users ratio of 1:10. The minimum sample size will be calculated using the formula below:

$$n = \frac{N(z^2)p(1-p)}{(N-1)d^2 + (z^2)p(1-p)}$$ (3)

where n is the calculated sample size, N is the population size (10,000), p is the maximum sample size factor (0.50), d is the desired tolerance (0.05), and z is the factor of assurance (1.96 for a 95% confidence level, two-tail test). For this research, the minimum sample size is 370 AIS users.

3.4 Statistical analysis

"Many numerical populations have a distribution that can be fit very close by an appropriate normal curve" (23:158). Normality was tested using skewness and kurtosis to ensure the sample fits a normal distribution. This was accomplished to validate the basic assumption that the sample "represents a random sample of size *n* from the normal population" necessary to use the statistics performed in the analysis (23:321).

Reliability of the two latent constructs was examined for consistency with the use of Cronbach's alpha, which "measures how well a set of items (or variables) measures a single dimensional latent construct" (37:1). Technically, Cronbach's alpha is not a

statistical test but a coefficient of reliability. The Cronbach's alpha is a function of

interitem-correlations and the size of the sample calculated by Equation 4:

$$\alpha = \frac{N \times r_{bar}}{1 + (N-1) \times r_{bar}}$$

(4)

where r-bar is the average inter-item correlation among the items and N is the

number if items (37:1). Sample size is an important factor in determining

Cronbach's alpha. As the sample size is increased, so is the reliability.

Additionally, as the average inter-item correlation is increased, so is the

Cronbach's alpha. Although it depends on the type of research, typically a high

Cronbach's alpha (i.e., $\alpha = 0.5$-0.6) means the individual items are measuring the

same construct and are indeed consistently related when measuring a single

dimensional latent construct (4:68).

After construct reliability was tested, factor analysis was performed on the

constructs to measure the correlation between multiple variables. Factor analysis fits a

regression line that best summarizes the linear relationship between the variables. The

first analysis to be performed was an initial factor analysis that looked at how many

factors are present in the Likert-type questions. Since the survey was designed with two

constructs (Database Importance and Data Importance), the analysis should show two

factors. To verify this data, the factors then were analyzed individually for factors and

the appropriate loadings calculated. From the factor loadings, one can see how much of

the variance in the question responses are explained by the factor, thereby helping to

eliminate or improve the original question. The variance explains how much of the

construct measured what it was designed to measure. For example, collecting the number

of hours a lamppost was on would explain 100% of the variance because there is no ambiguity in that value. For a latent construct such as Database Importance, the measure may capture other ideas that overlap that construct. The higher the variance explained, the better the construct measures what it was designed to measure. After the factors are verified, hypothesis testing can examine the trends among different user groups.

Two-tailed hypothesis tests were performed to search for statistical differences between groups selected in the first research question for the Database Importance and Data Importance constructs. This test was repeated for research questions 1b-1d to compare a variety of sub-groups within the sample. Comparison groups were selected based on sufficient sample size and available demographic information. For the hypothesis tests, the confidence interval alpha (not to be confused with the Cronbach's alpha that measures reliability) was 0.05. This level of alpha is high but deemed appropriate based on past exploratory research alpha levels (33:31). Analysis of Variance (ANOVA) was completed to verify the presence of significant differences in the Likert-scaled data. A one-way analysis of variance tests that part of the total variability in a response that is due to the difference in mean responses among the factor groups (37:1).

For the ANOVA, F-Tests were calculated to find the effect of specific groups on the means and a p-value was used to determine if the effect was statistically reliable. The test is statistically reliable when the p-value is less than the predetermined alpha of 0.05. In this case, the null hypothesis (H_o: $\mu_1 = \mu_{2\,...} = \mu_i$) would represent that there was not a significant difference between the means of the selected groups tested. Conversely, the alternate hypothesis (H_a: $\mu_1 \neq \mu_{2\,...} \neq \mu_i$) represents that the means of the groups were

significantly different. If the p-value is less than alpha, the null hypothesis is rejected in favor of the alternate hypothesis. An additional test of significance used comparison circles drawn from the confidence intervals calculated using the Tukey-Kramer and the Student's t distribution. Figure 4 demonstrates how comparison circles are interpreted to test for significance. Comparison circles are the only graphical technique "that works in general with both equal and unequal sample sizes" (35:180). As shown in Figure 4, an angle can be formed by drawing tangents to both circles at the point of intersection. If the angle is less than 90°, this indicates the circles are far enough apart to be considered significantly different. This analysis was used to answer the first research question; the tests were repeated for each individual group tested.
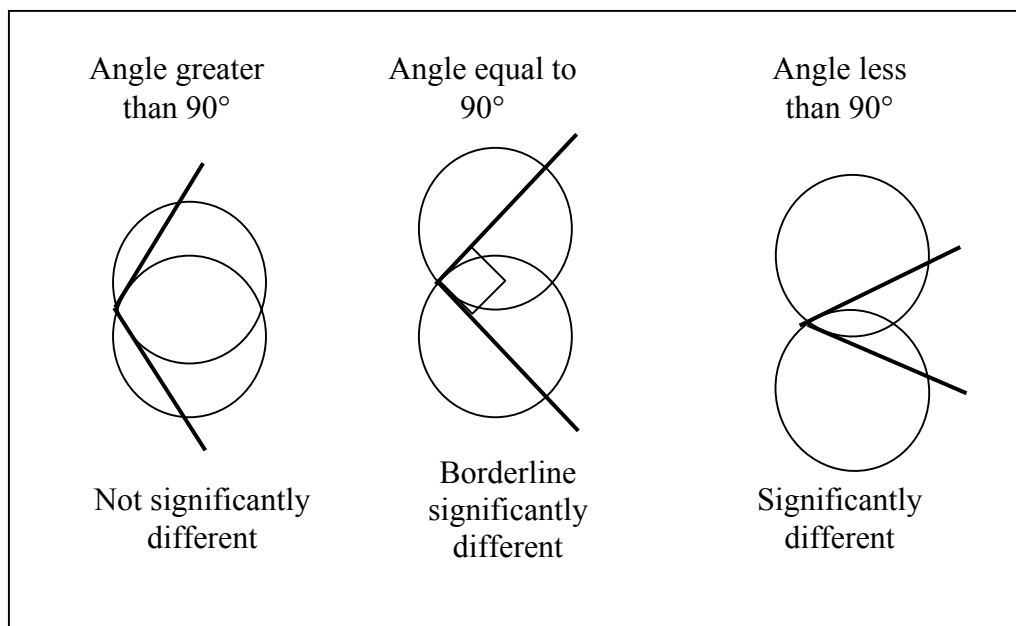
Figure 4: Diagram of How to Interpret Comparison Circles (35:181)

3.5 Content Analysis

Content analysis is the process of classifying many words of text into a few categories. This is an excellent way to summarize open-ended survey questions. There are many forms of content analysis, but "there is no simple right way to do content analysis. Instead, investigators must judge what methods are most appropriate for their substantive problems" (39:13). Colorado State University recommended a list of steps, shown in Table 8, to accomplish content analysis (5:1).

Table 8: Content Analysis Steps and Descriptions

Step	Description
Decide the level of analysis.	Select the topic and how the data will be collected (survey, speeches, etc.).
Decide how many concepts to code for.	Decide to look for single words, phrases, themes, or sentences in your text data.
Decide whether to code for existence or frequency of a concept.	Count the frequency the selected word or phrase occurs, or simply searches if words or phrases do or do not occur.
Decide how you will distinguish among concepts.	Select what codes conform to the concepts measured.
Develop rules for coding your texts.	Put limitations of the search for words phrases.
Decide what to do with "irrelevant" information.	What words will be rejected (e.g., like, to, and, be).
Code the texts.	Search for your codes in the text.
Analyze your results.	Draw conclusions based on the results of the coding.

The data used in the content analysis was collected via survey. The content analysis was performed using like phrases to group together the users' comments. For example, if the first comment is about the reliability of ACES, reliability will become a category and used when searching the remainder of the data. As with any method,

content analysis has both advantages and disadvantages. An advantage of this analysis is that it looks directly at communication via texts or transcripts; hence, it gets at the central aspect of social interaction, is an unobtrusive means of analyzing interactions, and provides insight into complex models of human thought and language use (6:1). A disadvantage of content analysis is that it is time consuming. Content analysis also tends to simply consist of word counts or often disregards the context that produced the text, as well as the state of the environment after the text is produced.

3.6 Summary of Chapter

This chapter has established the framework for evaluating the Air Force's civil engineer information systems by answering two research questions. The first question captures the perceptions of the civil engineering information system users on the constructs of Database Importance and Data Importance and tests to see if this perception differs between demographic groups. The second research question compiles the responses from open-ended questions and analyzes them to produce categories of more general comments.

IV. RESEARCH RESULTS

This chapter presents the results from the statistical and content analyses of the survey responses. The survey results are presented first, to include sample size and response rates for the civil engineer automated information system (AIS) users. Next, all the variables are tested for the assumption of normality. Reliability of the constructs was measured using Cronbach's alpha. The first research question was answered via hypothesis tests and analysis of variance (ANOVA) of the survey data. Finally, content analysis was used to interpret the open-ended questions from the survey and capture the information systems users' general comments.

4.1 Survey of Civil Engineering Automated Information System Users

As stated in Chapter II, there are 1335 active duty civil engineering officers in the Air Force. However, the Registrar's Office at the Air Force Institute of Technology only had names for about 80 percent of these individuals. Possible explanations for this difference include the constant changing of the Air Force's manpower, errors in the data, or differing assumptions used in the data query. Therefore, the survey was sent electronically to 1075 officers who were asked to either take the survey themselves or forward it to people in their organization who use civil engineering database systems. Administered in this manner, the final data set contained 814 responses from Air Force civil engineering personnel to include officers, enlisted, civilians, contractors, and foreign nationals. These 814 responses exceeded the minimum sample size of 370 calculated in

Chapter III, assuming a population of 10,000 users. If the responses are analyzed

according to the type of database system used, the number of responses falls short of the

minimum sample size (discussed later in this chapter).

Over 50 percent of the survey responses were received within two days of the

survey request notification and were electronically recorded directly from the survey,

thereby eliminating errors caused by manual data entry. The descriptive statistics for the

survey responses were computed and compiled as shown in Table 9. Each variable was

tested for normality using normal probability plots, also known as P-P Plots or P-Plots,

skewness and kurtosis. Probability plots compare the expected cumulative probability to

the observed cumulative probability. If the distribution is perfectly normal, the result is a

straight line with a slope of 1. Kurtosis and skewness are statistics that characterize the

shape and symmetry of the distribution. In Statistical Package for Social Sciences

(SPSS), these are displayed with their standard errors. The standard error of kurtosis is

the ratio of kurtosis to its standard error and can be used to test for normality. Normality

is rejected if the ratio is less than –2 or greater than +2. A large positive value for

kurtosis indicates that the tails of the distribution are longer than those of a normal

distribution; negative values for kurtosis indicate shorter tails (becoming like those of a

box-shaped uniform distribution). Normality is also rejected if skewness is less than –2

or greater than +2. Skewness represents where the mean, or hump, of the data is located.

A normal distribution has a skewness of 0, indicating the mean is perfectly centered in

the distribution. Positive skewness will shift the mean of the data to the right of normal.

The descriptive statistics for the variables used in this research are shown in Table

9 (frequency data for each variable can be found in Appendix B). Based on the skewness

and kurtosis values shown in Table 9, the initial analysis showed that all variables

followed a normal distribution with the exception of three: Database 1, Data 1, and Age.

For Database 1 (Survey Question #4: The Civil Engineer Database is an important part of

my job.), the kurtosis is 3.895 (higher than the +2 value). Figure 5 illustrates how the

data is subsequently shifted to the right. Thus, the data is positively skewed; however, a

number of low values extend the tails. The result is an increase in the kurtosis.

Table 9: Descriptive Statistics of Survey Results

	N	Mean	Std. Error	Std. Deviation	Variance	Skewness	Std. Error	Kurtosis	Std. Error
Data use	811							-1.563	.171
Supervisor status	811							-1.172	.171
Database use	812							.717	.171
Database 1	720	6.09	.05	1.349	1.820	-1.980	.091	3.895	.182
Database 2	717	4.91	.07	1.916	3.669	-.703	.091	-.688	.182
Database 3	716	5.33	.06	1.699	2.886	-1.057	.091	.252	.182
Database 4	716	5.62	.06	1.675	2.805	-1.231	.091	.512	.182
Database 5	717	2.50	.06	1.581	2.499	.985	.091	.112	.182
Database 6	719	5.15	.07	1.806	3.262	-.835	.091	-.355	.182
Data 1	717	5.69	.05	1.404	1.973	-1.487	.091	2.094	.182
Data 2	714	5.23	.05	1.469	2.157	-.900	.091	.181	.183
Data 3	713	4.62	.06	1.702	2.896	-.429	.092	-.778	.183
Data 4	715	4.42	.07	1.762	3.104	-.306	.091	-1.019	.183
Data 5	714	5.20	.06	1.506	2.268	-.929	.091	.346	.183
Data 6	716	5.08	.07	1.866	3.482	-.776	.091	-.541	.182
System used	720							-.243	.182
Gender	814							-.322	.171
Age	814							421.676	.171
Age (- 1)*	813							1.996	.171
Database	708	4.9301	.0469	1.24789	1.557	-.805	.092	.152	.183
Data	708	5.0457	.0455	1.21046	1.465	-.586	.092	.165	.183

* Age(-1) represents Age data minus one outlier
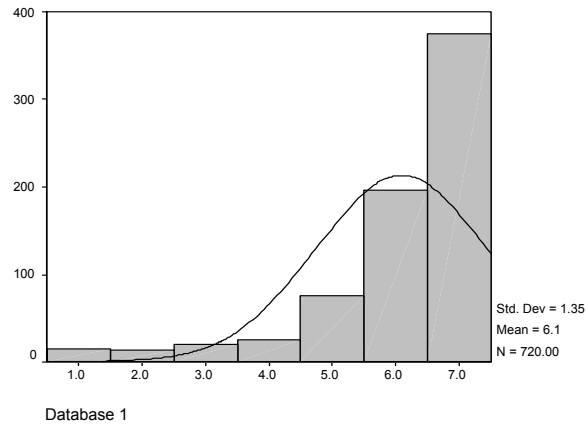
Figure 5: Histogram of Variable Database 1 and Normal Curve

Data 1 (Survey Question #10: The data that is collected helps me do my job.) has a calculated kurtosis of 2.094. This variable was assumed normal because the ± 2 range is a guideline, not a firm cutoff. Figure 6 shows that Data 1 resembles a normal curve.
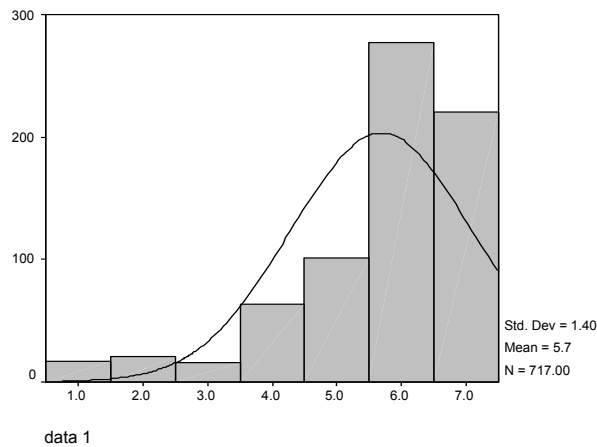
Figure 6: Histogram of Variable Data 1 and Normal Curve

The last variable that did not exhibit normal behavior was age due to its kurtosis of 421.676 and skewness of 17.544. After reviewing the data, invalid responses appeared to be the cause of this problem since reported ages ranged from 0 to 581. When the outlier response of 581 is removed, the skewness and kurtosis are within acceptable ranges (indicated by Age (-1) in Table 9). Figure 7 shows that the resulting data fits a normal distribution.

Std. Dev = 11.85
Mean = 38.4
N = 813.00

Age
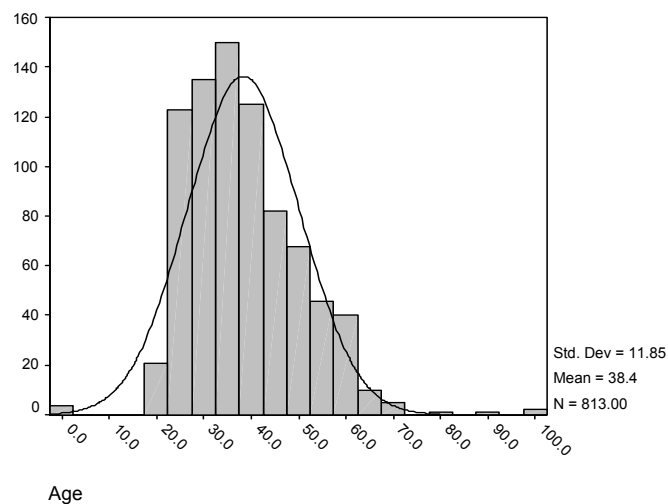
Figure 7: Histogram of Age (Minus the 581 Response) and Normal Curve

As another check for normality, probability plots were prepared for the Database and Data constructs as shown if Figures 8 and 9, respectively. The closer the samples are to the straight line, the more plausible the distribution is normal (23:634). These plots confirm the assumption that both constructs measured fit a normal distribution; therefore, statistical inferences can be made.
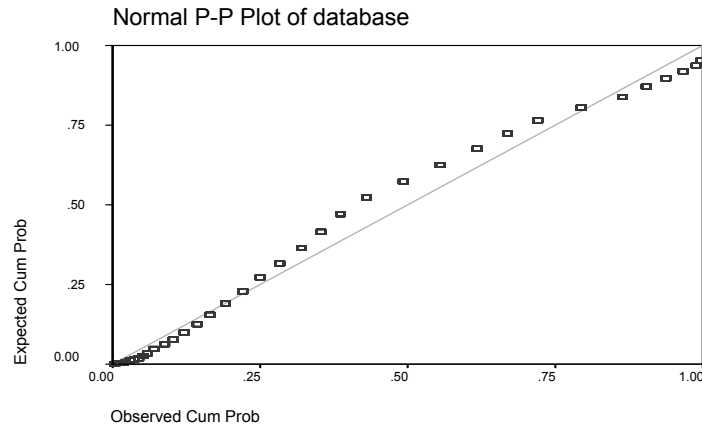
Figure 8: Normal P-P Plots of Construct Database
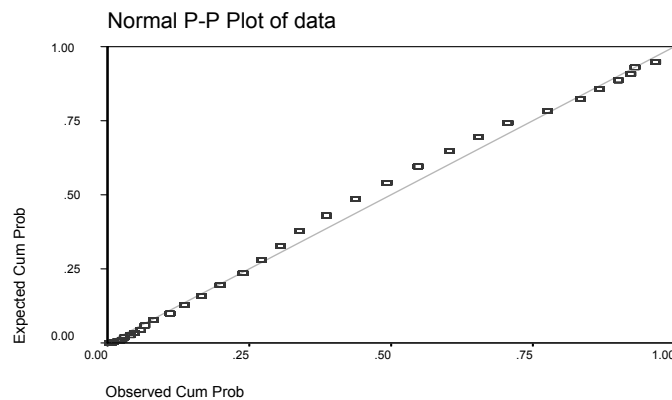
Figure 9: Normal P-P Plots of Construct Data

4.2 Research Question 1: How Important are the Current Databases and Associated Data to Civil Engineers?

4.2.1 Research Question 1a: How are the constructs of Database Importance and Data Importance perceived in the CE community?

This research question measured the constructs of Database Importance and Data Importance. Reliability analysis (and factor analysis shown in Appendix D) was completed on the constructs to ensure their validity before testing the hypotheses. To review, the questions that measured the Database Importance construct are listed below.

4. The Civil Engineer Database is an important part of my job. (Database 1)
5. The Civil Engineer Database helps me do my job faster. (Database 2)
6. The Civil Engineer Database is a useful tool for my use. (Database 3)
7. The Civil Engineer Database is a tool I use frequently. (Database 4)
8. The Civil Engineer Database I use cannot be improved much. (Database 5)
9. Without the Civil Engineer Database my job would be much harder. (Database 6)

The survey questions that measured the Data Importance construct are listed below.

10. The data that is collected helps me do my job. (Data 1)
11. The correct data is collected for the tasks I complete. (Data 2)
12. All the data collected is used. (Data 3)
13. All the data that I need is collected. (Data 4)
14. The data collected is used frequently. (Data 5)
15. I enter data frequently. (Data 6)

A reliability analysis was performed using Cronbach's alpha on the Database and Data constructs as shown in Table 10. Cronbach's alpha measures "how well a set of items (or variables) measures a single dimensional latent construct" and is not a statistical test, but a coefficient of reliability (or consistency) (37:1). Factors that increase the Cronbach's alpha include the number of items in the scales and high inter-item correlations. As Table 10 indicates, reliability was high for both constructs. Using SPSS, the alpha for the Database construct was 0.8353; this value increased to 0.8830 after dropping question number eight, *The civil engineer database I use couldn't be improved much*. If this research is repeated, a more appropriate wording for the question might be *The civil engineer database I use cannot be improved* or *The civil engineer database I use meets all of my needs*. The exclusion of question number eight was verified when factor analysis showed this question did not load on the intended factor. The alpha for the Data construct is 0.8403; it increased to 0.8453 by dropping question number 15, *I enter data frequently*. Although this is not a large change in alpha values and the question seems to fit the Data construct, exclusion of question number 15 was suggested

by the factor analysis in Appendix D. If this survey is administered to another sample, this question should be changed or eliminated.

Table 10: Reliability of Constructs (n=708)

	Alpha	Standardized Alpha	Questions
Database	0.8353	0.8339	q4, q5, q6, q7, q8, q9
Database*	0.8830	0.8866	q4, q5, q6, q7, q9
Data	0.8403	0.8487	q10, q11, q12, q13, q14, q15
Data*	0.8453	0.8500	q10, q11, q12, q13, q14

* Revised due to elimination of question.

The means of the Database and Data constructs are 4.9 and 5.0, respectively, as shown in Table 9. This indicates that the users of CE automated systems "slightly agree" that the systems are important to them in accomplishing their jobs. In other words, it might be suggested that civil engineers do not perceive their information systems to be a critically important part of their daily tasks. This may be a result of the system not doing what the user needs, the system being unreliable or unstable, or a variety of other reasons.

4.2.2 Research Question 1b: Are the perceptions of supervisors and employees significantly different?

To test if there is a significant difference between the perceptions of supervisors and employees, the following hypotheses were tested.

$$H_o: \mu_1 = \mu_{2\,...} = \mu_I \qquad \text{No significant difference in perception}$$

$$H_a: \mu_1 \neq \mu_{2\,...} \neq \mu_I \qquad \text{Significant difference in perception}$$

Table 11 sorts the Database and Data constructs by the user's supervisory status, which has 3 sub-groups: supervisor 1 (supervisors of employees and other supervisors),

supervisor 2 (supervisor of employees only), and employee (does not supervise). The

means of the different groups are not statistically different as shown in Table 12; the p

values are greater than the selected alpha value of 0.05. Therefore, the null hypothesis

cannot be rejected. This suggests that there is not a significant difference between

supervisors and employees for both Database Importance and Data Importance. This

result can be interpreted to mean that supervisors place the same level of importance on

the database and data constructs as do the employees.

Table 11: Descriptive Statistics Filtered by Supervisor Status

	Level	N	Mean	Std Error	Lower 95%	Upper 95%
Database	Supervisor 1	135	4.78867	0.10744	4.5777	4.9996
	Supervisor 2	222	5.02932	0.08378	4.8648	5.1938
	Employee	348	4.91606	0.06692	4.7847	5.0474
Data	Supervisor 1	135	4.86793	0.10405	4.6636	5.0722
	Supervisor 2	223	5.07668	0.08096	4.9177	5.2356
	Employee	347	5.08680	0.06490	4.9594	5.2142

Table 12: One-Way ANOVA by Supervisor Status

		Sum of Squares	Degrees of Freedom	Mean Square	F	Sig. (p)
Database	Between Groups	4.938	2	2.469	1.585	.206
Data	Between Groups	5.065	2	2.533	1.733	.178

4.2.3 Research Question 1c: Are the perceptions significantly different between MAJCOMs?

To test if there is a significant difference in perceptions between users in different MAJCOMs, the following hypotheses were tested. The descriptive statistics of the MAJCOMs are shown in Table 13.

$H_o: \mu_1 = \mu_{2\,...} = \mu_I$ No significant difference between MAJCOMs

$H_a: \mu_1 \neq \mu_{2\,...} \neq \mu_I$ Significant difference between MAJCOMs

Table 13: Descriptive Statistics Filtered by MAJCOM

	Level	N	Mean	Std Error	Lower 95%	Upper 95%
Database	ACC	66	4.52485	0.15231	4.2258	4.8239
	AETC	106	4.65764	0.12018	4.4217	4.8936
	AFMC	16	4.89688	0.30934	4.2895	5.5042
	AFRC	4	4.67000	0.61868	3.4553	5.8847
	AFSOC	11	5.39455	0.37308	4.6621	6.1270
	AFSPC	26	4.86423	0.24266	4.3878	5.3407
	AMC	58	4.93638	0.16247	4.6174	5.2554
	PACAF	327	5.09713	0.06843	4.9628	5.2315
	USAFE	50	5.05020	0.17499	4.7066	5.3938
	Other	44	4.76523	0.18654	4.3990	5.1315
Data	ACC	65	4.54354	0.14946	4.2501	4.8370
	AETC	106	5.05189	0.11704	4.8221	5.2817
	AFMC	16	4.78062	0.30125	4.1892	5.3721
	AFRC	4	4.87750	0.60251	3.6946	6.0604
	AFSOC	12	5.12417	0.34786	4.4412	5.8071
	AFSPC	26	4.98038	0.23632	4.5164	5.4444
	AMC	59	5.02797	0.15688	4.7200	5.3360
	PACAF	328	5.15790	0.06654	5.0273	5.2885
	USAFE	51	5.12373	0.16874	4.7924	5.4550
	Other	41	4.99171	0.18819	4.6222	5.3612

As shown in Table 13, the means and 95% confidence intervals of the Database

Importance and Data Importance constructs are sorted by MAJCOM. To determine if

there are significant differences between MAJCOMs, the results of one-way ANOVA

tests shown in Table 14 are used. For the database construct, the p value of 0.012 is less

than the alpha value of 0.05; therefore, the null hypothesis is rejected in favor of the

alternative hypothesis. This indicates that there is a significant difference in perceptions

between MAJCOMs regarding Database Importance. For the data construct, the p value

of 0.082 is greater than the alpha value of 0.05; therefore, the null hypothesis cannot be

rejected. This indicated that the MAJCOMs' perceptions regarding Data Importance are

statistically similar.

Table 14: One-way ANOVA of MAJCOM

		Sum of Squares	df	Mean Square	F	Sig. (p)
Database	Between Groups	32.547	9	3.616	2.363	.012
Data	Between Groups	22.402	9	2.489	1.714	.082

Another way to determine if there are significant differences between MAJCOMs

is to use graphical tools. The first method plots the means and 95% confidence intervals

on a common scale with the x-axis divided proportionally by group sample size. Each

group is represented by a diamond with three horizontal lines. The middle line represents

the mean, while the top and bottom lines represent the upper and lower bounds,

respectively, of the 95% confidence interval. To interpret the plots, first examine the

confidence interval diamonds for overlap on the y-axis. If there is no overlap, the groups are significantly different; however, the reverse is not always true. If the groups do overlap, the null hypothesis cannot be rejected; therefore, the groups may be significantly similar but further tests are needed. The second method plots comparison circles, using the Student's t and Tukey-Kramer test, where the circle's radius represents the 95% confidence interval. Similar to the diamonds, circles that represent significantly different groups are separated by less than 90° as shown in Figure 4. The further apart the circles become, the greater the significance of the difference. The Tukey-Kramer test uses a different error rate; therefore, the circles are larger and reduce the chance of falsely declaring significance.

Figure 10 shows the graphical plots for the Database Importance construct. Recall that the p value suggested there was a significant difference between MAJCOMs; however, the p value does not give any indication of where this difference occurs. As shown in the diamond plot in Figure 10, both ACC and AETC do not overlap with either USAFE or PACAF. This suggests that there are significant differences in the perception levels between these respective groups, with the largest difference being between PACAF and ACC. To confirm these visual observations from the diamond plots, comparison circles were used with both the Student's t distribution and the Tukey-Kramer Test; a summary of the results is shown in Table 15 (the Data Importance portion is discussed after the table).

Using the Student's t distribution, the comparison circles show that ACC's perception is significantly different from AFSOC, PACAF, and USAFE. However, when using the more conservative Tukey-Kramer test, ACC is significantly different only from

PACAF. AETC is significantly different from PACAF in both the Student's t

distribution and Tukey-Kramer test comparison circles. In all cases though, the major

commands located overseas (PACAF and USAFE) had higher perception levels than the

stateside commands. Due to the small sample size of certain MAJCOMs, the confidence

intervals are very large and significant differences cannot be validated. For example,

AFRC only has four samples and has the largest circle, thus indicating it is not

significantly different from any other MAJCOM.

Table 15: Summary of Significantly Different Construct Perceptions by MAJCOM

MAJCOM	Database Importance		Data Importance	
	Student's t	Tukey-Kramer	Student's t	Tukey-Kramer
ACC	AFSOC, PACAF, USAFE	PACAF	AETC, AMC, PACAF, USAFE	PACAF
AETC	PACAF	PACAF	ACC	None
AFMC	None	None	None	None
AFRC	None	None	None	None
AFSOC	ACC	None	None	None
AFSPC	None	None	None	None
AMC	None	None	ACC	None
PACAF	ACC, AETC	ACC, AETC	ACC	ACC
USAFE	ACC	None	ACC	None
Other	None	None	None	None
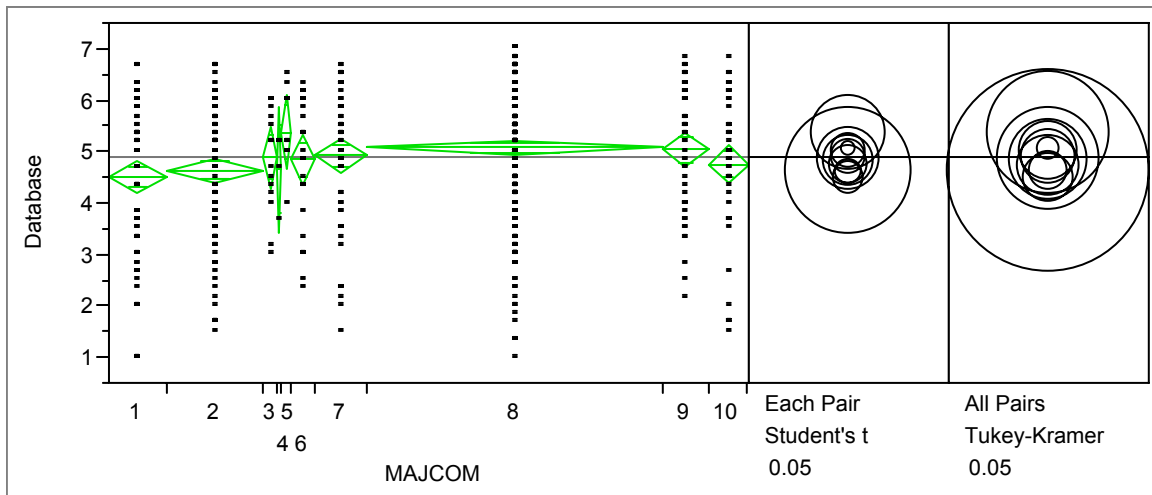
Major Command Legend
1 = ACC   2 = AETC   3 = AFMC   4 = AFRC   5 = AFSOC
6 = AFSPC   7 = AMC   8 = PACAF   9 = USAFE   10 = Other

Figure 10: Database Importance Construct Means by MAJCOM

Figure 11 shows the graphical plots for the Data Importance construct. Recall that the p value suggested the MAJCOM's perspectives on the Data Importance construct were not significantly different. However, as shown in the diamond plot in Figure 11, ACC does not overlap either AETC or PACAF, thus indicating a significant difference. When using Student's t distribution, ACC appears significantly different from PACAF, AETC, AMC and USAFE. With the Tukey-Kramer test, ACC is significantly different only from PACAF. These results were summarized in Table 15. The conflicting results between the p value and the graphical tools appear to indicate that the significant differences may be weak in nature.
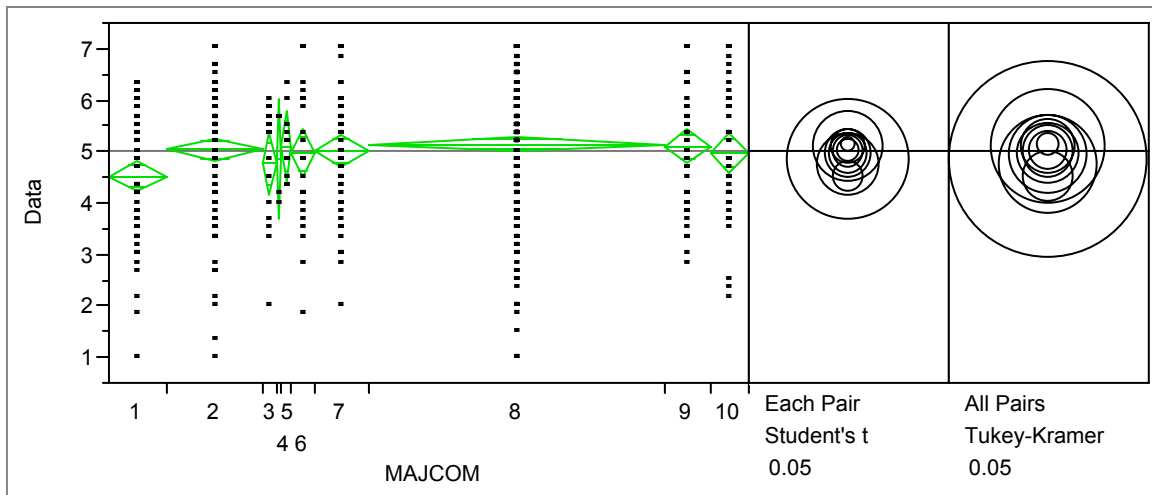
Major Command Legend
1 = ACC   2 = AETC   3 = AFMC   4 = AFRC   5 = AFSOC
6 = AFSPC   7 = AMC   8 = PACAF   9 = USAFE   10 = Other

Figure 11: Data Importance Construct Means by MAJCOM

4.2.3 Research Question 1d: Are the perceptions significantly different between demographically separated groups (gender, rank, and system used)?

To test if there are significant differences between demographic groups such as computer system used, gender and rank, the following hypotheses were tested.

$H_o: \mu_1 = \mu_{2\ldots} = \mu_I$ No significant difference between groups

$H_a: \mu_1 \neq \mu_{2\ldots} \neq \mu_I$ Significant difference between groups

Table 16 shows the results of one-way ANOVA tests for the Database Importance and Data Importance constructs by information system, gender and rank. Within each demographic group, the means are not statistically similar; the p values are all much lower than the alpha value of 0.05 and the F values are high. Therefore, at a confidence level of 95%, there is a significant difference in perception of both the database and data

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constructs within each demographic group. This indicates that gender, rank, and the

database system being used influences the users' perceptions.

Table 16: One-way ANOVA by Demographics

Group	Construct	F	P value
Gender	Database	9.253	0.002
	Data	11.846	0.001
Rank	Database	30.245	0.000
	Data	29.392	0.000
System used	Database	17.870	0.000
	Data	7.432	0.000

The perceptions of females regarding the importance of the database and the data

were significantly higher than the perceptions of males. This means that females are

more likely to agree that databases and data are important to their jobs. Shown in Figure

12, the 95% confidence intervals do not overlap and represent a further indication that

there is a significant difference.
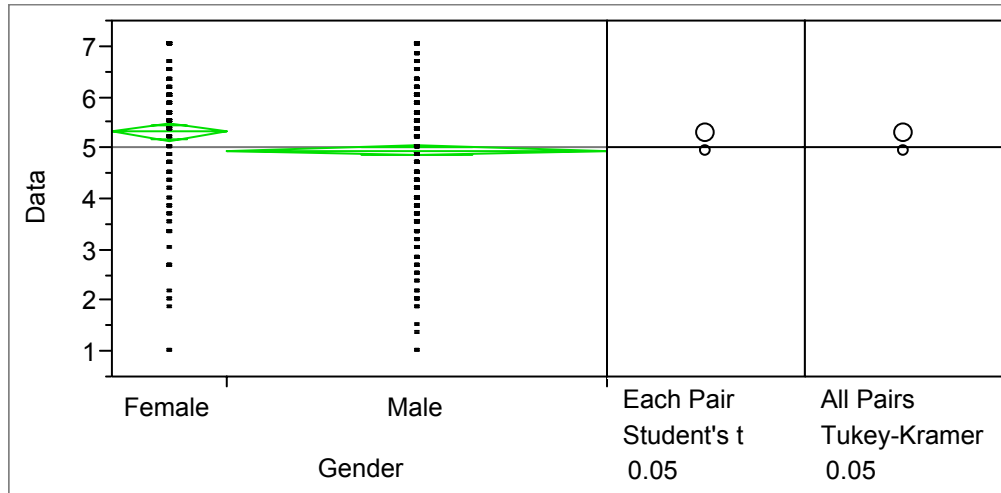
Figure 12: One way Analysis of Data By Gender

Table 16 also shows that there is a significant difference in perception levels based upon the rank of the respondents. Figures 13 and 14 graphically show where the differences occur for the database and data constructs, respectively. For both constructs, enlisted members have the highest perception levels and officers have the lowest levels. The perception levels for civilian employees are closer in value to those of enlisted members, which is understandable as these two groups of employees are more likely to use information systems on a daily basis. However, it should be noted that there is a significant difference between all pairs of data groups for the Database Importance constructs using the Student's t distribution and Tukey-Kramer test. For the Data Importance construct, all three groups are significantly different from each other using the Student's t distribution. With the Tukey-Kramer test, there is a significant difference between both enlisted members and officers, between civilian employees and officers, but not between enlisted members and civilian employees. It is unclear why officers would have a lower perception of the constructs, but this trend does not affect supervisors' perceptions as discussed earlier; perhaps officers have higher expectations and are more disappointed when the system does not meet their expectations.

Figure 13: One way Analysis of Database By Rank
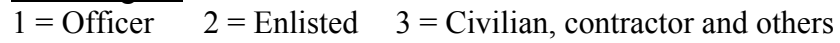
Rank Legend
1 = Officer   2 = Enlisted   3 = Civilian, contractor and others

Figure 14: One way Analysis of Data By Rank

Shown previously in Table 16, there is also a significant difference between the users of different information systems on the Database Importance construct. Figure 15 shows these differences in perceptions grouped by the users' primary information system. The six systems represented in the figures are IWIMS/WIMS, ACES-RP, ACES-PM, ACES-H, ACES-FD, and Other. The Others category includes systems such as: APIMS, Locally-Developed Database (ACCESS or EXCEL format), CEMAS, ABSS, ACES FM, Prime BEEF RAMPs, AF-EMIS, GeoBase, and Wixel (Waste Tracking Environmental Data Base). Shown in the diamond plots of Figure 15, there is a significant difference between WIMS/IWIMS and all other systems except ACES-RP. Furthermore, it appears as though WIMS/IWIMS users have a higher perception of the database than do ACES users. These observations are confirmed by both the Student's t distribution and Tukey-Kramer test. All three graphical techniques also indicate that there is no significant difference between any of the ACES modules for the database construct. The Tukey-Kramer suggests the strongest differences exist between WIMS/IWIMS and the ACES-PM and ACES-H modules.
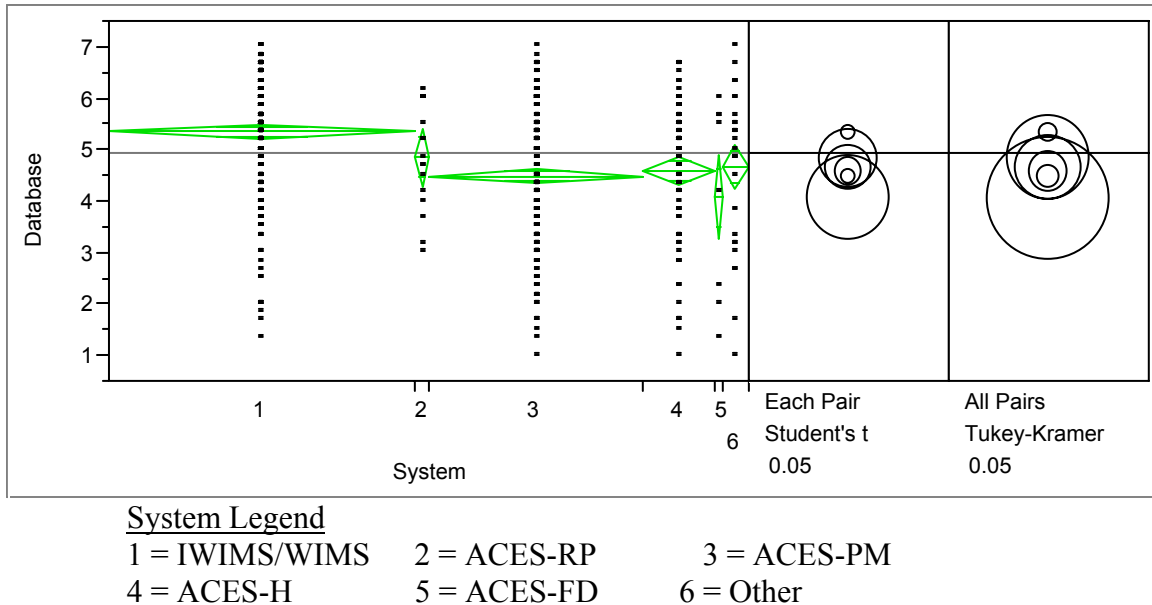
Figure 15: One way Analysis of Database By System Used

System Legend
1 = IWIMS/WIMS   2 = ACES-RP   3 = ACES-PM
4 = ACES-H   5 = ACES-FD   6 = Other

Shown in Figure 16, there is also a difference between the users of different information systems on the Data Importance construct. Based on the diamond plot, IWIMS/WIMS is significantly different from ACES-PM, ACES-FD and Other systems. This is confirmed by the comparison circles using the Student's t distribution. When using the Tukey-Kramer test, IWIMS/WIMS is significantly different from only ACES-PM and Other. The diamond plots and Tukey-Kramer tests indicate that there is no significant difference between any of the ACES modules. However, the Student's t distribution indicates a significant difference between the perceptions of ACES-PM and ACES-H users. A summary of the comparison circles as a result of the Student's t distribution and Tukey-Kramer test based on the system being used is shown in Table 17.
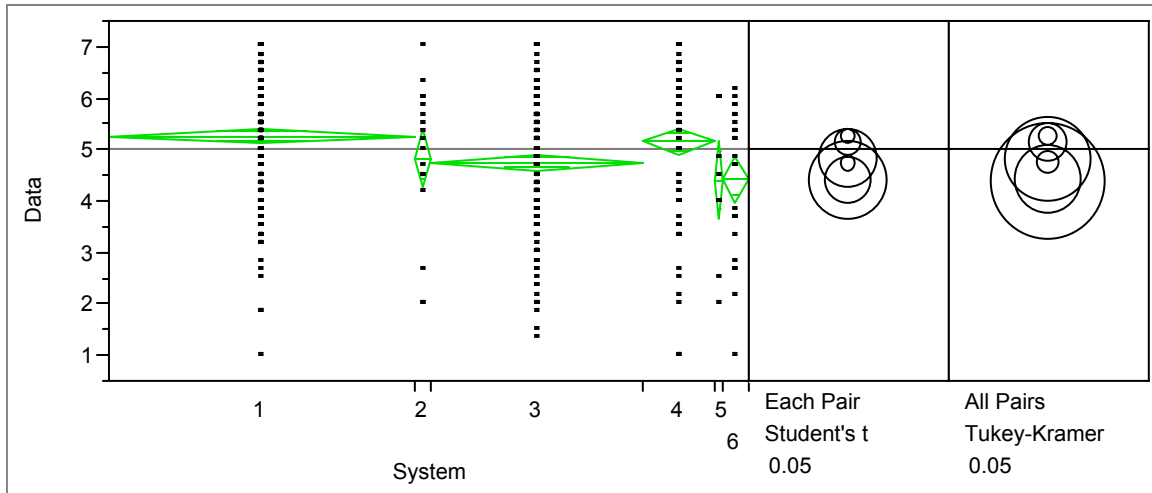
System Legend
1 = IWIMS/WIMS   2 = ACES-RP   3 = ACES-PM
4 = ACES-H   5 = ACES-FD   6 = Other

Figure 16: One way Analysis of Data By System Used

Table 17: Summary of Significantly Different Construct Perceptions by System

System	Database Importance		Data Importance	
	Student's t	Tukey-Kramer	Student's t	Tukey-Kramer
WIMS/IWIMS	ACES-PM, ACES-H, ACES-FD, Other	ACES-PM, ACES-H, ACES-FD, Other	ACES-PM, ACES-FD, Other	ACES-PM, Other
ACES-RP	None	None	None	None
ACES-PM	WIMS/IWIMS	WIMS/IWIMS	WIMS/IWIMS, ACES-H	WIMS/IWIMS
ACES-H	WIMS/IWIMS	WIMS/IWIMS	ACES-PM, Other	None
ACES-FD	WIMS/IWIMS	WIMS/IWIMS	WIMS/IWIMS	None
Other	WIMS/IWIMS	WIMS/IWIMS	WIMS/IWIMS, ACES-H	WIMS/IWIMS

To further determine if any significant differences exist between the systems

being used, the Tukey-Kramer Honestly Significant Difference (HSD) test was used on

both constructs. This test quantifies the difference of means between systems and can be

used to help understand the magnitude of the differences. A positive number indicates a

significant difference, with a larger number indicating a greater difference. As shown in

Table 18, the largest differences for the database construct are between IWIMS/WIMS

and ACES-PM, and also between IWIMS/WIMS and ACES-H. In both cases,

perceptions towards IWIMS/WIMS are significantly higher than all ACES modules

except ACES-RP, thus indicating that users feel the IWIMS/WIMS database and the data

it collects are more important. Also note that there is no significant difference between

any of the ACES modules and Other systems. Furthermore, the ACES modules are not

significantly different from each other. Shown in Table 19, the differences are similar

but not as large pertaining to users' perceptions of data. Again, IWIMS/WIMS is

significantly different from ACES-PM and Others. Also, the ACES modules are not

significantly different from each other.

Table 18: Tukey-Kramer HSD Comparisons for Database by System Used

	IWIMS/WIMS	ACES-RP	ACES-PM	ACES-H	ACES-FD	Others
IWIMS/ WIMS	-0.25780	-0.33234	0.57580	0.34876	0.08221	0.02751
ACES-RP	-0.33234	-1.14952	-0.48218	-0.62913	-0.65653	-0.84455
ACES-PM	0.57580	-0.48218	-0.30852	-0.34311	-0.78386	-0.49636
ACES-H	0.34876	-0.62913	-0.34311	-0.53324	-0.72998	-0.65610
ACES-FD	0.08221	-0.65653	-0.78386	-0.72998	-1.67569	-0.74908
Others	0.02751	-0.84455	-0.49636	-0.65610	-0.74908	-0.89570

Table 19: Tukey-Kramer HSD Comparisons for Data by System Used

	IWIMS/WIMS	ACES-RP	ACES-PM	ACES-H	ACES-FD	Others
IWIMS/WIMS	-0.25947	-0.40368	0.22503	-0.31477	-0.28745	0.15901
ACES-RP	-0.40368	-1.16038	-0.77474	-0.57202	-0.97663	-0.64909
ACES-PM	0.22503	-0.77474	-0.31210	-0.03151	-0.80603	-0.36404
ACES-H	-0.31477	-0.57202	-0.03151	-0.53491	-0.43998	-0.02315
ACES-FD	-0.28745	-0.97663	-0.80603	-0.43998	-1.59479	-1.28251
Others	0.15901	-0.64909	-0.36404	-0.02315	-1.28251	-0.92075

4.3 Research Question 2: Based on frequency of responses, what are the most significant issues reported by users?

As Table 20 illustrates, civil engineers use many types of information systems in the field. Of the users who identified the system they used, 47.9% are using the Work Information Management System (WIMS). The next two largest groups of users were ACES-PM and ACES-H with 29.1% and 10.4% of the users, respectively. Recognition of the database systems being used is critical to correctly interpreting the responses of the three open-ended questions included in the survey. These responses were compiled and categorized by content analysis for each system. Some users had many comments and others had none; summaries of less frequent comments are shown in Appendix F.

Table 20: Systems Used by Survey Responders

	Frequency	Percent	Valid Percent
ACES Real Property Module	17	2.1	2.4
ACES Engineering Module	237	29.1	32.9
ACES Housing Module	85	10.4	11.8
ACES Fire Protection Module	9	1.1	1.3
ACES Total	348	42.8	48.3
IWIMS/WIMS	345	42.4	47.9
Others	27	3.3	3.8
Total	720	88.5	100.0
User did not report system used	94	11.5	
Total	814	100.0	

The most frequent responses to this research question are shown in Table 21. All users' comments were compiled and the response count indicates the number of times that comment was recorded. The percentages measure the amount of users, within a specific system, that shared the selected comment. For example, 32% of the ACES-PM users surveyed felt the system was slow. The higher the percentages, the more common an issue was to that specific information system. Therefore, these responses can be used as a relative weighting of importance in the civil engineering community. Ideally, these comments can be generalized to the entire civil engineering population.

Table 21: Users Top 5 Comments by Frequency

System Used	Most Frequent Responses									
	1		2		3		4		5	
ACES-RP	4	24%	4	24%	-	-	2	12%	-	-
ACES-PM	65	27%	75	32%	23	10%	22	9%	11	5%
ACES-H	9	11%	17	20%	4	5%	4	5%	1	1%
ACES-FD	1	11%	-	-	1	11%	-	-	-	-
ACES Totals	79	23%	96	28%	28	8%	28	8%	12	3%
WIMS/IWIMS	87	25%	23	7%	16	5%	16	5%	10	3%
Other	3	11%	1	4%	7	26%	3	11%	-	-
Totals	169	23%	120	17%	51	7%	47	7%	22	3%

<u>Legend for Most Frequent Responses</u>
1. User feel their current system is the best they have used
2. User feels the system speed detracts from productivity and/or use.
3. User creates/uses ACCESS or EXCEL to do what their system cannot.
4. User has difficulty using or accessing the report-writing feature.
5. User feels their system is unreliable.

From the 814 users surveyed, only 409 comments were collected regarding the top five issues, which averages one major issue reported for every two users. This wide array of different comments suggests that there is not a single problem plaguing users but many smaller issues. Assuming that users would have commented if a large problem did exist, this would indicate the information systems currently in use are meeting the needs of the users in the field. In contrast to the low scores on the Likert-type data, this lack of comments may indicate users are more satisfied than the constructs indicated.

The most frequent comment submitted was that the users felt the system they are currently using is the best to date. In fact, it appears as though ACES and WIMS/IWIMS users share this perception equally as reflected by the 23% and 25% values, respectively, in the table. The remainder of the comments shown in Table 21 are negative, but this was expected because the survey was aimed at areas that needed improvement.

The problem mentioned most often was the speed of the user's current system. Some of the respondents liked their current system but were discouraged because of slow processing rates. This problem is much worse for ACES users, especially ACES-PM users. Worldwide, ACES users interface with three centralized locations. As seen by the number of samples for the different ACES modules, ACES-PM had the largest number of respondents. This large number of users accessing the system may be the cause for its sluggish performance; it may also be a predictor of problems to come as other modules are implemented and the number of users increase.

Another problem area concerned reports; this is reflected in the third and fourth comments shown in Table 21. The dissatisfaction with system speed mentioned above may be a reason for the increased use of ACCESS and EXCEL worksheets as workarounds. Another aspect to this problem is that the program used to write reports, Oracle Discoverer, is difficult to use and slow. Additionally, one user reported that annual licenses were $800 for each copy of Oracle Discoverer, thus availability was limited to only a few ACES users. A possible option is to have a local ACCESS expert write simple programs to retrieve required data instead of the Oracle report writer. Many users are already doing this, as shown by a high percentage of responses for the third comment in Table 21 for Other systems. However, other databases should not be used to input or store data; this duplicates data and is a main cause of the present data's inaccuracy. This is partially related to the last comment in Table 21 concerning system reliability. Of course, the system may be perceived as unreliable because of the slow speeds mentioned above.

4.4 Summary of Findings

Civil engineering automated information systems seem to meet the requirements of the users in the field; however, there is room for improvement as users are only partially satisfied with the current status of the systems. A sample of 814 users was surveyed from the population and their perceptions analyzed. All the variables used in this study followed a normal distribution as required for further statistical analysis. Additionally, the constructs of Database Importance and Data Importance were found to have reliabilities greater than 0.8. Summaries of the results concerning the research questions are presented in Chapter V along with relevant conclusions.

V. CONCLUSION AND RECOMMENDATIONS

This chapter reviews the research questions and summarizes the findings of the previous chapter. Conclusions derived from the research questions are also presented. Limitations of the research and recommendations for further research are provided as well.

5.1 Summary of Findings and Conclusions

The survey of civil engineer automated information system (AIS) users recorded 814 responses, well beyond the minimum 370 required for significant statistical analysis. The survey questions can be seen in Appendix A and the frequencies of the results in Appendix B. Responses to open-ended questions can be seen in Appendix G.

5.1.1 Research Question #1

The first research question focused on the perceived importance of the current databases and associated data to civil engineers. As a review, the specific questions asked for research question #1 are shown below.

1. How important are the current databases and associated data to civil engineers?
   1a. How are the constructs of Database Importance and Data Importance perceived in the CE community?
   1b. Are the perceptions of supervisors and employees significantly different?
   1c. Are the perceptions significantly different between MAJCOMs?
   1d. Are the perceptions significantly different between demographically separated groups (system used, rank and gender)?

Civil engineers "slightly agree" that both their database and the data it collects are important with an average Likert scale reading of 4.9 and 5.0, respectively, on a 7-point scale. In other words, it might be suggested that civil engineers do not perceive their information systems to be a critically important part of their daily tasks. This may be a result of the system not doing what the user needs, the system being unreliable or unstable, or a variety of other reasons.

After determining the general perceptions, comparisons were made between groups to determine if any significant differences existed. There was no significant difference found between supervisors and employees for either the Database Importance or Data Importance constructs. Regardless of whether it was managers using the information system for decision-making or employees using the information system for daily tasks, perceptions of the database and Data Importance did not differ. This can be interpreted to mean that supervisors place the same level of importance on the constructs as do the employees.

There was a statistical difference between MAJCOMs for the database construct when using the Analysis of Variance (ANOVA) test using the 95% confidence interval. Comparison circles created by the Student's t distribution suggested that PACAF's perceptions of Database Importance are significantly higher than those of both ACC and AETC. Comparison circles created by the Tukey-Kramer test confirmed this difference. Other MAJCOMs displayed significant differences of less magnitude, which may be a result of small and unequal sample sizes. In summary, the majority of the perceptions between the MAJCOMs were assumed to be similar with the exception of ACC and PACAF.

When using the ANOVA test, there was no significance difference in perceptions regarding the Data Importance construct since the p value was greater than the alpha value of 0.05. However, when using comparison circles drawn from the Student's t distribution, ACC was significantly different from PACAF, AETC, AMC and USAFE. The more conservative Tukey-Kramer test revealed ACC is significantly different from only PACAF. The conflicting results between the p value and the graphical tools appear to indicate that the significant differences may be weak in nature.

Comparisons were also made based on the gender, rank, and specific system used. To a high degree of significance, analysis showed a difference in perceptions between each of these groups when using the p value as the deciding criteria. Females displayed a statistically higher perception of the database and associated data than their male counterparts. This result was not expected, and no explanation can currently be made for this difference. Officers' perceptions were significantly lower than those of enlisted members and civilian personnel for both constructs. Additionally, the perceptions of enlisted members and civilian personnel were significantly different for the Database Importance construct. For the Data Importance construct, all three groups were significantly different from each other using the Student's t distribution; however, the Tukey-Kramer test indicated that no significant difference existed between civilian personnel and enlisted members. The lower mean scores for officers may reflect their limited use of information systems as compared to enlisted members and civilians personnel; however, this difference did not emerge when comparing supervisors and employees. Therefore, a possible explanation is that officers may have been disappointed

due to higher expectations. These results for groups based on either gender or rank were verified with the graphical tools.

There was a significant difference between groups based on the system being used. The systems tested include WIMS/WIMS, ACES-RP, ACES-PM, ACES-H, ACES-FD and Other systems. Overall, WIMS/IWIMS users have a higher perception of the Database and Data Importance than do ACES users (with the exception of ACES-RP users). One of the largest differences in perceptions exists between ACES-PM and IWIMS/WIMS. There was no significant difference between any of the ACES modules and Other systems; furthermore, the ACES modules were not significantly different from each other. IWIMS/WIMS users may have higher perceptions of the database and data because of familiarity since they are more accustomed to their information system. However, the limited sample size of other systems prevents reliable statistical inferences on differences to be validated.

5.1.2 Research Question #2

Research question # 2 gathered the users' responses to open-ended questions regarding the civil engineer's automated information systems. The survey asked three questions, as shown below, with an additional section for general comments.

17. In your opinion, the database system you selected above the best to date? If not, what is that database system and why is it better?

18. For your current database system, what data is collected but not used?

19. For your current database system, what data could be used but is not collected?

The responses to these questions were reduced to a few categories using the technique of content analysis. Compared to the 814 users surveyed, the number of reoccurring comments was relatively low and resulted in an average of one major comment being reported by every two users. This was not expected based on the relatively low Likert-scale values for Database Importance and Data Importance (4.9 and 5.0, respectively). A possible explanation for this is that the survey respondents did not take the time to write comments on the survey; on the other hand, it may be that the respondents are more satisfied than the constructs indicated. The most frequent comments, sorted by information system, are shown in Table 22.

Table 22: Users Top 5 Comments by Frequency

System Used	Most Frequent Responses									
	1		2		3		4		5	
ACES-RP	4	24%	4	24%	-	-	2	12%	-	-
ACES-PM	65	27%	75	32%	23	10%	22	9%	11	5%
ACES-H	9	11%	17	20%	4	5%	4	5%	1	1%
ACES-FD	1	11%	-	-	1	11%	-	-	-	-
ACES Totals	79	23%	96	28%	28	8%	28	8%	12	3%
WIMS/IWIMS	87	25%	23	7%	16	5%	16	5%	10	3%
Other	3	11%	1	4%	7	26%	3	11%	-	-
Totals	169	23%	120	17%	51	7%	47	7%	22	3%

Legend of Most Frequent Responses
1. User feel their current system is the best they have used
2. User feels the system speed detracts from productivity and/or use.
3. User creates/uses ACCESS or EXCEL to do what their system cannot.
4. User has difficulty using or accessing the report-writing feature.
5. User feels their system is unreliable.

The most frequently recorded comment was that users felt the information system they were currently using was the best to date. This comment was recorded 169 times, which represents about 20% of the 814 users responding to the survey. This perception was shared almost equally between ACES and WIMS/IWIMS users as reflected by the 23% and 25% values, respectively. Therefore, it might be suggested that both types of systems are considered the "best to date."

The most frequent problem that users reported was slow system speed. At some locations, users reported the time required to access the system and the large amount of downtime the system experiences makes it unusable. This problem appeared to be much worse for ACES users, especially ACES-PM users. This may be because of the large number of ACES-PM users trying to access one of three centralized systems. Slow system speed may be a contributing factor to the fact that the next most frequent problem reported by users was that they had to use ACCESS or EXCEL as workarounds to accomplish their jobs. If this problem is not addressed, the perception levels of ACES users will most likely decrease.

Another aspect to the use of ACCESS or EXCEL is the difficulty of using or accessing the report-writing feature in the ACES modules. Users commented that (1) the Oracle Discoverer program cannot be customized to meet their needs and (2) is not accessible to everyone due to limited licenses per installation caused by high licensing fees. The problems discussed so far probably contribute to the last comment in Table 22 in which users indicate that their systems are unreliable. This may be a combination of slow response times and a feeling of inaccurate data caused by the creation and use of duplicate databases in ACCESS or EXCEL.

5.2 Limitations

This research has several limitations. The first is that the sample is not random. The population of AIS users was unknown; therefore, the survey was sent to civil engineering officers who were asked to complete the survey if appropriate and forward it to personnel in their units who use automated information systems. For example, the amount of overseas responses was much greater than the portion of the service they represent and may have skewed the results. If this research is repeated, Standard Systems Group (SSG) may be able to provide a list of AIS users.

Another limitation is the calculation of the minimum sample size. The final data set contained 814 responses from Air Force civil engineering personnel to include officers, enlisted, civilians, contractors, and foreign nationals. These 814 responses exceeded the minimum sample size of 370 calculated in Chapter III. However, if the responses are analyzed according to the type of database system used, the number of responses falls short of the minimum sample size. Additionally, the minimum sample size should be calculated independently for each type of system.

Another limitation was that the constructs used in the survey for Database and Data Importance were created by the author and have not been tested. Ideally, the constructs should have been tested through a pilot study and revised accordingly based on the results. If this research is repeated, the comments from this research should be used to create a new survey that is pilot tested to determine factor loadings. Furthermore, the literature should be searched in greater detail to determine if suitable constructs have been previously reported.

As with any collection of data using surveys, information is self-reported and invalid data is possible. For example, the age variable reported responses ranging from 0 to 581. Another source of error is with any anonymous survey is the difficulty in identifying duplicate responses.

5.3 Recommendations

5.3.1 Future Research

Many opportunities for additional research have been uncovered during this research. As additional ACES modules are released or adapted for another organization's information system, this research can be used as a baseline against which future results can be compared. For future studies though, a construct that measures training effectiveness should be added to capture the effect on perception levels. Additionally, all constructs should be pilot tested.

In order to explain the perceptions of users and develop ways to improve these perceptions, a technology acceptance model can be applied to these systems. This research would be focused on the level users employ their current systems and what can be done to make these systems more useful, thus making the employee more productive. This analysis can examine common ACES features or a specific module.

Another topic for future research includes exploring the possibility of adopting ACCESS to replace Oracle Discoverer as a report writer. A cost analysis could compare the site licenses needed to give users report writing capability to hiring ACCESS database writers working for ACES users. Part of this research could also determine if ACES contains all of the necessary data to ensure that users can accomplish their jobs; it

may be that additional information should be input or collected, or that certain types of data do not need to be collected.

Lastly, the applicability of innovations from current private sector information systems could be studied. Possible benefits could be realized if suitable systems in use by large private organizations were adapted for Air Force use. Possible areas of interest include material ordering, personnel data storage, and financial packages.

5.3.2 ACES Recommendations

As ACES is implemented in the civil engineering community, many opportunities for improvement exist. Cutting edge communication technology may be compatible with ACES software. These include wireless terminals, or hand held equipment, that interacts with ACES and would allow users to input and retrieve data directly from the job site.

A few users commented that additional training is needed. Possible improvements to the training program include a web-based tutorial that users could complete at their leisure or an advanced help menu with a search function that can answer the users' questions. This would allow the users to help themselves in-between formal classroom training.

A back to basics review of civil engineering business rules may be beneficial. The design of existing and future ACES modules, along with respective business rules, should be based on public law and executive order; results would lead to changes in the appropriate Air Force Instructions. The goal should be to strive for process improvement instead of updating an information system to match current business techniques.

The civil engineering users do have valuable feedback concerning their information systems. A forum is needed where this data is collected and where users can see the status of their feedback and the suggestions of others. A link to inform users of coming changes to their modules would also be helpful. These information systems need to be designed to meet the users needs, or they will not be used and effective decision-making with the data will be impossible.

5.4 Final Summary

There are a lot of challenges facing the automated information systems used in the civil engineering career field in the near future if these systems are to be useful and productive tools. One challenge is the review of business rules to ensure the new ACES is both efficient and effective. Another challenge is moving ACES to a web-based platform to increase the capabilities of civil engineers in the field. However, this increased capability cannot come at the expense of system speed that hinders users from accessing or inputting data. This research attempted to answer two research questions, and in the process discovered more research areas that can be accomplished to better understand how to increase the effectiveness of civil engineering automated information systems.

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ACRONYMNS

ACES	Automated Civil Engineer System
ACES-FD	ACES Fire Department Module
ACES-H	ACES Military family Housing Module
ACES-PM	ACES Project Management Module
ACES-RP	ACES Real Property Module
AF	Air Force
AFCESA	Air Force Civil Engineer Support Agency
AFI	Air Force Instruction
AFIP	Automated Facilities Information
AFPC	Air Force Personnel Center
AFPD	Air Force Policy Directive
AFPMD	Air Force Program Management Directive
AFSC	Air Force Specialty Code
AIS	Automated Information System
ANOVA	Analysis of Variance
ASG	Automation Steering Group
ASTM	American Society of Testing and Materials
BCAS	Base Contracting Automated System
BEAMS	Base Engineer Automated Management System
BRAC	Base Realignment and Closure
C4I	Command, Control, Communications, Computers and Intelligence
C4IFTW	C4I For The Warrior
CCB	Configuration Control Board
CE	Civil Engineer or Civil Engineering
CEMAS	CE material acquisition system
CFO	Chief Financial Officers
COTS	Commercial Off The Shelf
DDDS	Defense Data Dictionary System
DDM	DoD Data Model
DMRD	Defense Management Review Decision
DoD	Department of Defense
DoDI	Department of Defense Instruction
DOS	Disk Operating System
DSP	Defense Standardization Program
FIM	Facility Investment Matrix (FIM)
GAFS	General Accounting and Finance System
HAZMAT	Hazardous Materials
HQ	Head Quarters
HSD	Honestly Significant Difference
IDIQ	Indefinite delivery indefinite quantity

IDW	Information Data Warehouse
IPT	Integrated Process Team
IS	Information System
IWIMS	Interim Work Information Management System
JOCAS	Job Order Cost Accounting System
LOGMOD	Logistics Module
MAJCOM	Major Command
MDS	Manpower Data System
MILCON	Military Construction
MILMOD	Military Personnel System
MITS	Medical Information Training System
ODS	Operational Data Store
OLAP	Online Analytical Processing
PC	Personal Computer
PDS	Personnel Data System
PPBS	Planning, Programming, and Budgeting System
SBSS	Standard Base Level Supply System
SCN	Survey Control Number
SDLC	Systems Development Life Cycle
SPS	Standard Procurement System
SPSS	Statistical Package for Social Sciences
SQL	Structured Query Language
SSG	Standard Systems Group
WIMS	Work Information Management System

APPENDIX A: SURVEY QUESTIONS

INSTRUCTIONS

All items are completed by selecting the appropriate answer or typing an answer where required. If, for any item, you do not find a response that fits your situation exactly, use the one that is the closest to the way you feel.

Please complete the questionnaire in one of two ways: First, complete the survey via the web and click the submit button when complete; all data will be sent to the confidential AFIT database. Second, print the survey out and complete by hand. Once complete please seal it and return it in an envelope through your base mail system to:

ACES Survey, AFIT/ENV, Bldg. 640, 2950 P Street, Wright-Patterson AFB, OH 45433

The survey should take approximately 10 to 20 minutes to complete. There are a total of 26 questions in this survey with an additional section for comments.

For the following questions mark the circle that corresponds to the selection that best describes your current job duties.

In the following statements, the word "database" refers to the computer program that is most commonly used in your daily duties. The term "data" refers to the specific information that is entered or retrieved from the system. It does not refer to how easy or difficult the information is to enter or retrieve. Please answer each statement with respect to these definitions.

1. Which statement best describes the importance of Civil Engineer Database systems (IWIMS, ACES, etc.) in your daily duties?

  I use a database system daily
  I do not use a database system daily

2. Describe your current employment status.

  I supervise other supervisors
  I supervise only other employees
  I do not supervise anyone

3. Which statement best describes the amount of time you spend using a Civil Engineer Database?

   I do not use a Civil Engineer Database (Please skip to question 20)
   Less than 10 minutes a month
   More than 10 minutes a month but less than 60 minutes a month
   More than 60 minutes a month

 For each statement, please click the circle that indicates the extent to which you agree the statement is true. Use the scale below for your responses.

This section will deal with the Civil Engineer Database that you use most frequently. Please answer relating to the overall system, not specific data.

4. The Civil Engineer Database is an important part of my job 1 2 3 4 5 6 7
5. The Civil Engineer Database helps me do my job faster 1 2 3 4 5 6 7
6. The Civil Engineer Database is a useful tool for my use 1 2 3 4 5 6 7
7. The Civil Engineer Database is a tool I use frequently 1 2 3 4 5 6 7
8. The Civil Engineer Database I use cannot be improved much 1 2 3 4 5 6 7
9. Without the Civil Engineer Database my job would be much harder 1 2 3 4 5 6 7

In this section, please answer referring to the specific data that is collected, not the database program overall.

10. The data that is collected helps me do my job. 1 2 3 4 5 6 7
11. The correct data is collected for the tasks I complete 1 2 3 4 5 6 7
12. All the data collected is used 1 2 3 4 5 6 7
13. All the data that I need is collected 1 2 3 4 5 6 7
14. The data collected is used frequently 1 2 3 4 5 6 7
15. I enter data frequently 1 2 3 4 5 6 7

16. Please select the database system you use most frequently (check only one)

   IWIMS/WIMS
   ACES Real Property Module
   ACES Engineering Module
   ACES Housing Module
   ACES Fire Protection Module
   Others

For questions 17, 18 and 19, answer them with regards to the database you selected in question 16.

17. In your opinion, the database system you selected above the best to date? If not, what is that database system and why is it better?

18. For your current database system (as selected in question 16), what data is collected but not used?

19. For your current database system (as selected in question 16), what data could be used but is not collected?

The following questions request personal information that will be used to create demographics for research purposes only. ALL ANSWERS ARE STRICTLY CONFIDENTIAL and, unless you wish to tell us your identity, all answers are anonymous. No one outside the research team will ever see your questionnaire. No identification of individual responses will occur. We ask for some demographic information in order to interpret results more accurately and make comparisons between large groups.

20. What is your gender?

  Female
  Male

21. What is your age in years?

22. What is your Air Force Specialty Code (AFSC) for military or Occupational Series for Civilians?

23. What is your rank/grade?

24. What Flight are you assigned to within Civil Engineering?

  Select One Command Section Resources Operations Engineering Environmental Housing EOD Fire Department Other

25. At which base are you currently assigned?

26. To which Major Command (MAJCOM) are you currently assigned?

 Pick One ACC AETC AFMC AFRC AFSOC AFSPC AMC PACAF USAFE Other

This completes the survey. Thank you for your participation.

If you have any additional comments, please write them here.

Note: This is a simplified text version. The original was created in HTML.

APPENDIX B: DETAILED SURVEY FREQUENCY DATA

1. Which statement best describes the importance of Civil Engineer Database systems (IWIMS, ACES, etc.) in your daily duties?

1. I use a database system daily
2. I do not use a database system daily

Data use

	Frequency	Percent	Valid Percent	Cumulative Percent
1	533	65.5	65.7	65.7
2	278	34.2	34.3	100.0
Total	811	99.6	100.0	
Missing	3	.4		
Total	814	100.0		

2. Describe your current employment status.

1. I supervise other supervisors
2. I supervise only other employees
3. I do not supervise anyone

Supervisor status

	Frequency	Percent	Valid Percent	Cumulative Percent
1	166	20.4	20.5	20.5
2	250	30.7	30.8	51.3
3	395	48.5	48.7	100.0
Total	811	99.6	100.0	
Missing	3	.4		
Total	814	100.0		

3. Which statement best describes the amount of time you spend using a Civil Engineer Database?

1. I do not use a Civil Engineer Database (Please skip to question 20)
2. Less than 10 minutes a month
3. More than 10 minutes a month but less than 60 minutes a month
4. More than 60 minutes a month

Database use

	Frequency	Percent	Valid Percent	Cumulative Percent
1	98	12.0	12.1	12.1
2	37	4.5	4.6	16.6
3	144	17.7	17.7	34.4
4	533	65.5	65.6	100.0
Total	812	99.8	100.0	
Missing	2	.2		
Total	814	100.0		

Database construct on a 7 point Likert Scale

4. The Civil Engineer Database is an important part of my job

Database 1

	Frequency	Percent	Valid Percent	Cumulative Percent
1	15	1.8	2.1	2.1
2	13	1.6	1.8	3.9
3	20	2.5	2.8	6.7
4	25	3.1	3.5	10.1
5	76	9.3	10.6	20.7
6	196	24.1	27.2	47.9
7	375	46.1	52.1	100.0
Total	720	88.5	100.0	
Missing	94	11.5		
Total	814	100.0		

5. The Civil Engineer Database helps me do my job faster

Database 2

	Frequency	Percent	Valid Percent	Cumulative Percent
1	59	7.2	8.2	8.2
2	57	7.0	7.9	16.2
3	53	6.5	7.4	23.6
4	83	10.2	11.6	35.1
5	109	13.4	15.2	50.3
6	181	22.2	25.2	75.6
7	175	21.5	24.4	100.0
Total	717	88.1	100.0	
Missing	97	11.9		
Total	814	100.0		

6. The Civil Engineer Database is a useful tool for my use

Database 3

	Frequency	Percent	Valid Percent	Cumulative Percent
1	32	3.9	4.5	4.5
2	42	5.2	5.9	10.3
3	36	4.4	5.0	15.4
4	64	7.9	8.9	24.3
5	128	15.7	17.9	42.2
6	205	25.2	28.6	70.8
7	209	25.7	29.2	100.0
Total	716	88.0	100.0	
Missing	98	12.0		
Total	814	100.0		

7. The Civil Engineer Database is a tool I use frequently

Database 4

	Frequency	Percent	Valid Percent	Cumulative Percent
1	21	2.6	2.9	2.9
2	39	4.8	5.4	8.4
3	43	5.3	6.0	14.4
4	51	6.3	7.1	21.5
5	77	9.5	10.8	32.3
6	191	23.5	26.7	58.9
7	294	36.1	41.1	100.0
Total	716	88.0	100.0	
Missing	98	12.0		
Total	814	100.0		

8 The Civil Engineer Database I use cannot be improved much

Database 5

	Frequency	Percent	Valid Percent	Cumulative Percent
1	247	30.3	34.4	34.4
2	200	24.6	27.9	62.3
3	84	10.3	11.7	74.1
4	94	11.5	13.1	87.2
5	48	5.9	6.7	93.9
6	30	3.7	4.2	98.0
7	14	1.7	2.0	100.0
Total	717	88.1	100.0	
Missing	97	11.9		
Total	814	100.0		

9. Without the Civil Engineer Database my job would be much harder

Database 6

	Frequency	Percent	Valid Percent	Cumulative Percent
1	39	4.8	5.4	5.4
2	51	6.3	7.1	12.5
3	43	5.3	6.0	18.5
4	96	11.8	13.4	31.8
5	98	12.0	13.6	45.5
6	187	23.0	26.0	71.5
7	205	25.2	28.5	100.0
Total	719	88.3	100.0	
Missing	95	11.7		
Total	814	100.0		

Data construct on a 7 point Likert Scale
10. The data that is collected helps me do my job

Data 1

	Frequency	Percent	Valid Percent	Cumulative Percent
1	17	2.1	2.4	2.4
2	21	2.6	2.9	5.3
3	16	2.0	2.2	7.5
4	64	7.9	8.9	16.5
5	101	12.4	14.1	30.5
6	277	34.0	38.6	69.2
7	221	27.1	30.8	100.0
Total	717	88.1	100.0	
Missing	97	11.9		
Total	814	100.0		

11. The correct data is collected for the tasks I complete

Data 2

	Frequency	Percent	Valid Percent	Cumulative Percent
1	14	1.7	2.0	2.0
2	27	3.3	3.8	5.7
3	64	7.9	9.0	14.7
4	88	10.8	12.3	27.0
5	129	15.8	18.1	45.1
6	268	32.9	37.5	82.6
7	124	15.2	17.4	100.0
Total	714	87.7	100.0	
Missing	100	12.3		
Total	814	100.0		

12. All the data collected is used

Data 3

	Frequency	Percent	Valid Percent	Cumulative Percent
1	35	4.3	4.9	4.9
2	65	8.0	9.1	14.0
3	85	10.4	11.9	25.9
4	134	16.5	18.8	44.7
5	117	14.4	16.4	61.2
6	187	23.0	26.2	87.4
7	90	11.1	12.6	100.0
Total	713	87.6	100.0	
Missing	101	12.4		
Total	814	100.0		

13. All the data that I need is collected

Data 4

	Frequency	Percent	Valid Percent	Cumulative Percent
1	42	5.2	5.9	5.9
2	87	10.7	12.2	18.0
3	104	12.8	14.5	32.6
4	108	13.3	15.1	47.7
5	120	14.7	16.8	64.5
6	179	22.0	25.0	89.5
7	75	9.2	10.5	100.0
Total	715	87.8	100.0	
Missing	99	12.2		
Total	814	100.0		

14. The data collected is used frequently

Data 5

	Frequency	Percent	Valid Percent	Cumulative Percent
1	19	2.3	2.7	2.7
2	35	4.3	4.9	7.6
3	39	4.8	5.5	13.0
4	101	12.4	14.1	27.2
5	149	18.3	20.9	48.0
6	238	29.2	33.3	81.4
7	133	16.3	18.6	100.0
Total	714	87.7	100.0	
Missing	100	12.3		
Total	814	100.0		

15. I enter data frequently

Data 6

	Frequency	Percent	Valid Percent	Cumulative Percent
1	44	5.4	6.1	6.1
2	58	7.1	8.1	14.2
3	47	5.8	6.6	20.8
4	86	10.6	12.0	32.8
5	102	12.5	14.2	47.1
6	174	21.4	24.3	71.4
7	205	25.2	28.6	100.0
Total	716	88.0	100.0	
Missing	98	12.0		
Total	814	100.0		

16. Please select the database system you use most frequently (check only one)

1. IWIMS/WIMS
2. ACES Real Property Module
3. ACES Engineering Module
4. ACES Housing Module
5. ACES Fire Protection Module
6. Others

	Frequency	Percent	Valid Percent	Cumulative Percent
1	345	42.4	47.9	47.9
2	17	2.1	2.4	50.3
3	209 (237)*	25.7 (29.1)*	29.0 (32.9)*	79.3 (83.2)*
4	82 (3)*	10.1 (10.4)*	11.4 (11.8)*	90.7 (95.0)*
5	9	1.1	1.3	91.9 (96.3)*
6	58 (27)*	7.1 (3.3)*	8.1 (3.8)*	100.0
Total	720	88.5	100.0	
Missing	94	11.5		
Total	814	100.0		

*Of 58 Others: 28 ACES PM (5 environmental), 3 FMO, 27 others (ABSS, ACCESS, CEMAS, FMIS, APIMS, self created systems, etc.)

20. What is your gender?
    1. Female
    2. Male

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	186	22.9	22.9	22.9
Male	628	77.1	77.1	100.0
Total	814	100.0	100.0	

21. What is your age in years?

(Too many to list)

22. What is your Air Force Specialty Code (AFSC) for military or Occupational Series for Civilians?
  (Too many to list)

23. What is your rank/grade?

(Too many to list)

24. What Flight are you assigned to within Civil Engineering?

Flight	Frequency	Percent	Valid Percent	Cumulative Percent
Command Section	13	1.6	1.6	1.6
Engineering	190	23.3	23.3	24.9
Environmental	67	8.2	8.2	33.2
EOD	8	1.0	1.0	34.2
Fire Department	17	2.1	2.1	36.2
Housing	96	11.8	11.8	48.0
Operations	289	35.5	35.5	83.5
Other	90	11.1	11.1	94.6
Resources	44	5.4	5.4	100.0
Total	814	100.0	100.0	

25. At which base are you currently assigned?

(Too many to list)

26. To which Major Command (MAJCOM) are you currently assigned?

MAJCOM	Frequency	Percent	Valid Percent	Cumulative Percent
ACC	74	9.1	9.1	9.1
AETC	112	13.8	13.8	22.9
AFMC	22	2.7	2.7	25.6
AFRC	5	.6	.6	26.2
AFSOC	12	1.5	1.5	27.6
AFSPC	29	3.6	3.6	31.2
AMC	67	8.2	8.2	39.4
Other	66	8.1	8.1	47.5
PACAF	374	45.9	45.9	93.5
USAFE	53	6.5	6.5	100.0
Total	814	100.0	100.0	

APPENDIX C: ACES-PM ENHANCEMENTS

DISCLAIMER: The following has been taken verbatim from the ACES-PM IPT and has not been altered or edited in any way.

As of 4-6 DEC 01

1. IN ALL AREAS OF ACES PM – GREY OUT AREAS THAT ARE CONTROLLED BY USER RIGHTS – Critical

JUSTIFICATION: This feature would benefit everyone by allowing users to know what they can update and what they can't updated based on the user rights. This feature would stop needless calls on the system to sends forms telling the user they are unable to update the field. The end result would be a shorter learning curve for new users, more productivity and less traffic to and from the system. Anytime a feature reduces calls on the system the result will enhance performance to the user.

2. Copying Projects - Critical
    a. Bring more information over via check boxes for specific fields that will be the same.
    b. Copy function should copy selectable fields
        1. Facility #
        2. Funding Source
        3. Sub Source
        4. Cat Code
        5. WO#
        6. FIM Rating
        7. FIM Justification
        8. Wing#
        9. Method of Design
        10. Method of Construction
        11. Project Delivery Method
        12. Contract #
        13. Contractor

JUSTIFICATION: : The function for copying projects currently brings over a very small amount of data. The only data brought by copy with no supplemental boxes checked is the Project Number, Title, FY, EEIC w/no associated cost, FIM rating and PE. Most of the time projects are copied is because it has to be phased or because it is an IDIQ type project that uses the essentially the exact same data   given some flexibility of choices.
The options to include environmental data and text are beneficial. Other options to pull other data based on need would prove highly beneficial and would eliminate a lot

of unnecessary rebuilding of records. The more flexibility to field users the less the system has to respond. This option will reduce the amount of times a user has to occupy a record and will eliminate looking up data from another record just to manually update a new record. Monumental time and task savings to the field users

3. User Preferences on Directory Screen - Critical
      a. Work Order #
      b. Contract #
      c. Programmed Amt
      d. CWE
      e. CWE/PA
      f. MAJCOM Priority
      g. FIM Rating
      h. Wing Priority
      i. Local Status
      j. Wing Number
      k. Fund Status
      l. Funds Indicator
      m. Award Date

JUSTIFICATION: The ability to have user preferences such as those above will enhance the capabilities to review and cleanse the database. It would prove highly beneficial to any user who does not have report writing capabilities. This feature would allow a user to customize the way data is presented based on a specific need without having to go into individual records. The end result being less time a user has to be in the system, allowing more time for other job requirements that are currently being left unaccomplished due to the nature of the beast. The above items are a few examples that were discussed by the IPT team.

The option to choose items based on business rules wound enhance performance based on users needs. Options for choices might be a sub component of user preferences, or possibly a new front-end allowing choices based on business rules such as programming, design, contracting actions and funding. The second option would be a method for allowing a user to get very specific on how they use the project directory for reviewing records and would be a way to provide flexibility to users. Flexibility allows users to tailor the system to fit their job thereby increasing productivity

4. Project Quick Add – Critical
      a. Facility entry needs to pull Cat Code info from Real Property   Records
            1. Cat Code fill entry needs pick list in order to update from
                primary code for that specific facility w/facility description also

JUSTIFICATION: When a facility number is chosen, the Category Code for that facility should be automatically selected for the project. Category Codes are required for FIM and IRR classification of facilities. The primary category code for the facility is the category code that is used most of the time for the project. The selected category code and its description should be displayed on the quick-add screen and the option to change it should be available.

5. Programming Tab   - Critical
   a. DEMO needs to be added in Valid Values for Funding Source when PE = XXX93 (Should stay in Valid Values for Sub Source when PE does not equal XXX93). Develop business rules that define ATFP usage similar to DEMO above
   b. Add automatic info field that has selected IRR facility class based on Cat Code.
   c. Valid Values for Project Status
      1. Need Notice to Proceed Added to Pick List
      2. Change Status to add a new status code to read "BDA- Bid Accepted.

JUSTIFICATION: Currently, there's no simplified way for programmers to determine Installation Readiness Report Facility Classifications (i.e. Operations & Training, Mobility, Supply, Admin etc.). Recommend an 'IRR Facility Class' box be placed under the 'Category Code' box on the 'Suppl. Info' tab in ACES PM. IRR is soon to become a funds allocation tool for facility SRM requirements. This is crucial for programmers to have an avenue to sort facility projects based on IRR Facility Class. As ACES matures in development and refinement, users will need to be able to rely on it solely—not needing additional software to get the job done (FIM Data Tool, IRR Data Tool, etc.).

6. FIM - Critical
   a. Valid Values For FIM Rating – remove PML
   b. Valid Values For FIM Rating – Define each rating so there is no question of usage (In Help Menu would be fine)
   c. FIM triggers to eliminate errors as identified by FIM data tool

JUSTIFICATION: Remove Preventive Maintenance Level (PML) from the FIM Rating pull down menu since it doesn't pertain to FIM (it is a sustainment issue).

Under the ACES Help screen (?) remove PML and add the Air Staff definitions of Critical, Degraded & Minimal so it would be readily available and there would be no question as to use.

Add Installation Readiness Report (IRR) category field to the Programming   Screen (right column either just below the Category Code since it is Cat Code driven or below mission area. Have this field tied to the Cat Code but with the   ability to

change since some bases have unique facility issues (Dover's Port   Mortuary is a Primary Mission facility).

Only allow FIM ratings for projects with EEICs of 522 & 529 (& PA < $500K for MC projects); projects with EEICs of 521, 524 & 592 would be Sustainment (PML).

7. Contract Mgmt Tab in Projects - Critical
    a. Add contract # on this screen
    b. Actual % and funds status to be linked
    c. Estimated completion date field added

8. 1391s - Critical
    a. The form prints out as a Dec 76 form (ANG added has been revised)
    b. Facilities Form
        1. Block 10
            a. O&M Requirement, Adequate, & Substandard do not print on 1391
            b. Edit for Scope + Adequate Must Equal Requirement needs to be eliminated
        2. Block 1-7
            a. Block 8 – The amount should round up or down as appropriate (ANG added)
            b. PE from project screen should carry through to this screen
            c. Have FY and PE automatically update to 1391 when changes are made from project record
        3. Block 11
            a. Cannot add requirements and it only prints "As Required" (ANG added)

        4. Block 9 – Facilities Tab
            a. Copy title to top line and include summation that totals the line itmes without having to print 1391 to verify

JUSTIFIATION: : Many of the above measures are more fixes than enhancements and reflect the need to enhance the overall 1391 process that has been identified in IPT Considerations item 19d below. This will be addressed further in item 19d.

The major part of this recommendation is the way the block 9 is developed. Currently the user has to flip from the facilities tab to the DD Form 1391 tab to the block nine tab to see the total project cost. Not all cost estimates are done the way a block 9 is structured. Most of the time when one is building a 1391 block 9 from cost estimate they have to back in to the cost from the bottom line. When a 1391 is done this way you either have to sit down and write the block 9 out   manual with a

calculator or you have to flip back and forth between the facilities tab and the 1391.block 9 tab. A very time consuming process either way. A proposed solution would be to construct the block 9 as a single form having it look exactly the way it would appear in the DD1391. This would save multiple calls on the system and would decrease the learning curve

One additional enhancement to the block 9 would be to have the top line automatically carry the project title, the project scope and unit of measure and have it to automatically total the sub-line items below on the facilities portion of the form. This would improve the ease of constructing a DD1391. A possible cross-over check with the programmed amount and the total funded cost or rounded cost would also be a nice feature to remind the programmer to check the DD1391 or to check the programmed amount any time one or the other is changed.

9. Project Milestones Area - Critical
  a. Base/MAJCOM/HAF Defined Milestones for pick list
  b. Automatic update of award date (only valid award date is the one under contracts)

JUSTIFICATION: Base/MAJCOM/HAF Defined Milestones for pick list. Each echelon of command needs the ability to define the milestones that are important to them and create a pick list of their own. We currently have the ability to type our own milestone name, but that is time consuming and does not allow for standardization of fields for report writing, etc. For instance, some bases may want milestones for NTP Date, Bid Opening Scheduled Date, Warranty Dates, Project Close-out Dates, Real Property Capitalization Date, etc, while other bases may not want those milestones.
Automatic update of Milestone Actual dates when dates are entered elsewhere in the project record. Contract award date which is entered in the Contracts screen needs to be automatically entered in the Milestone for the Actual Contract Award Date. Also, NTP Date, Bid Opening Date, and Authority to Advertise Dates that are entered on the Contract Management Tab need to make an automatic entry in the Milestone Actual date column

10. IDIQ (Paving, Carpet, Roofs) - Critical
  a. Bring back IWIMS functionality for Delivery Orders (WPAFB to provide sample report)
    1. Process not defined well enough per Ron Stoner to rework
      a. WPAFB to flowchart and decipher ACES process for SSG/AFCESA
      b. Investigate usage of ACES as is and define Needs
    2. EEIC field for updates needed

11. Multiple Updates (Further Defined) - Degraded

a. Need a form programmable based on business area based on user preference picks (similar to prioritized project form)
   1. FIM/Justification
   2. CWE
   3. FY
   4. Wing Priority
   5. Status

JUSTIFICATION: This recommendation is very similar to item 3 above. The above is a few possible picks but many other field based on business rule could prove beneficial. The ability to have user preferences such as those above will enhance the capabilities to quickly update the database without making a lot of calls on the system going from one record to the next. This feature would allow a user to customize the way data is updated based on a specific need without having to go into individual records. Most of the time a person is using the system at base level they are doing repetitive updates to the same data in different records i.e. updating the funds status and fund indicator at year-end   The end result being less time a user has to be in the system, allowing more time for other job requirements that are currently being left unaccomplished due to the nature of the beast. The above items are a few examples that were discussed by the IPT team.
   The option to choose items based on business rules wound enhance performance based on users needs. Flexibility allows users to tailor the system to fit their job thereby increasing productivity.

12. Design - Degraded
    a. Method of Design -Redefine description of T - Traditional Design Bid Build
    b. Change Fund Status and Fund Indicator to display design info

13. Project Managers Area - Degraded
    a. Change form to include data straight across as before
    b. Possible pick list of personnel (Personnel Readiness List)

14. Discoverer - Degraded
    a. ADVANCED TRAINING NEEDED
    b. Consider users group/forum web site with bulletin board for cross feed and questions and possible FTP site for sharing well documented reports. If the AF Portal is the appropriate media then a possible sub-section in the CE Community specific to ACES PM issues with invitation to all of the CE users.

JUSTIFICATION: Discoverer is a fairly straight forward program however the

majority of the users (not the nerd crowd) can make the basic report, but the construction

of limiting conditions and calculations elude the typical user. It is cumbersome to write multi-level condition statements. The entire IPT team tried to conquer a relatively simple compound condition statement and never succeeded. This is a good indication that that additional training is required or the user defined configuration of the project directory screen is needed.

One additional topic of discussion was to have a resource for users to share data and ask questions as in item 14b above. This would be a huge benefit to users and would give users a place to find answers. The potential cost saving to the government in terms of reinventing the wheel by every user. There are a large number of people consuming huge amounts of time trying to write reports and not being able to get the results they want. This type resource would be a very big benefit and productivity enhancement.

15. Prioritize Projects - Minimal
    a. Add Wing Priority to the Priority Update Form (Prioritize Projects Program)
    b. Add Wing Number

JUSTIFICATION: The wing priority is used to determine funding for each base. The Wing Priority is also what is determined at a Facility Board.

At Spangdahlem, we have hundreds of projects that must be prioritized. In the Prioritize Projects function of ACESPM you are able to manipulate the base priority and the MAJCOM priority but not the wing priority. This function allows the user to go through a list and change the priorities one right after another. Without this function the user is forced to go into each individual record and to change the wing priority.

If a project that is not very high on the list moves up from say priority number 50 to priority number 5 then the user must go into 45 records to adjust the Wing Priorities. This takes ridiculous amounts of time. In order to change the priorities now, the user

must type in each project number and wait for the system to query the database to pull up the record. If the Wing Priority was included in the Prioritize Projects function changing priorities based on the facilities boards would be easy. it doesn't really make since to have a prioritize projects function that does not allow the user to change the priorities of the projects

16. Funding Tab in Projects - Minimal
   a. Add PR number to this screen

17. Project Uniques Area - Minimal
   a. User defined list of picks
   b. Organization on Programming screen

JUSTIFICATION: User defined list of picks. Allow the users to develop   their own "Unique Name" list and to develop a pick list of "Value" for each Unique Name. This will allow for standardization of data entry and efficiency in entering data because values can be picked and not typed. Example: Creating a "Unique Name" for organization and then developing a pick list of "Values" for our base organizations will allow us to standardize the organizations and develop reports which give our customers a list of their projects.
The only place to enter Organization is in Project Uniques. Organization should be entered on the programming screen an automatically updated in the Project Uniques screen. This is a more efficient way to enter information because the   requesting organization is known when you enter a new project and by having the field the programming screen, you avoid having to got o another screen which is time consuming. If organization is moved to the programming screen, it needs to have the capability of a base defined pick list of values.

18. All Capital Letters for Certain Fields - Minimal
   a. Milestones
   b. Project Mgr
   c. Project Title

19. IPT Considerations
   a. IPT needs to define business processes to help with "other" costs that are not in ACES but are COMM, furniture, etc. Where or should this be displayed in the PM module? Refer to the old CID field in PDC (ALFONSO)
   b. IPT needs to define this process - Unlink MILCON from Housing/NAF items to afford proper update rights for base managed projects. Recognize that MFH/NAF should be treated like O&M vs. MILCON (DWELLEN)
   c. IPT needs to clarify business rules for Funding Source, Sub Source, PE, and EEIC - Map back to FM REG 65-601 (VANSCOY)

d. IPT should better define business processes for 1391 with regards to all program types. As an example – What constitutes line 1 of Block 9? (HARPER)

APPENDIX D: FACTOR ANALYSIS OF CONSTRUCTS

Factor analysis was conducted using principle axis factoring (PAF) with an

oblimin rotation and Kaiser normalization for the Database and Data constructs. The

scales used to measure these constructs were developed for this research and have not

been previously tested or verified. Confirmatory factor analysis was initially completed

with all the factors to determine how many factors were present. The pattern matrix for

all questions, as shown in Table 23, revealed three factors when only two were expected.

Factor 2 matches the Data construct and factor 3 matches the Database construct.

However, another factor was also found.

Table 23: Pattern Matrix for all Questions

	Factor 1	Factor 2	Factor 3
Database 1	.602		.424
Database 2			.949
Database 3			.788
Database 4	.690		.349
Database 5	-.264	.251	.205
Database 6			.719
Data 1	.266	.313	.398
Data 2		.693	
Data 3		.722	
Data 4		.780	
Data 5	.316	.512	
Data 6	.589	.324	

As Table 23 indicates, the questions for Questions 8 (Database 5) *The Civil Engineer*

Database I use cannot be improved much and Question 15 (Data 6) *I enter data*

frequently loaded against unknown factor 1 and resulted in a decreased reliability. Factor

analysis was recalculated, as shown in Table 24, after eliminating these two questions.

The pattern matrix revealed two factors as desired, but cross loading occurred on

questions for Question 10 (Data 1) *The data that is collected helps me do my job* and

Question 14 (Data 5) *The data collected is used frequently*. This cross loading may be

due to users having difficulty differentiating between the Data collected and the Database

they use or their inherent similarities. If a pilot study was used, the questions could have

been adjusted in an attempt to improve the factor loadings.

Table 24: Pattern Matrix for all questions minus Q8 and Q15.

	Factor 1	Factor 2
Database 1	.812	
Database 2	.736	
Database 3	.792	
Database 4	.772	
Database 6	.797	
Data 1	.557	.305
Data 2		.696
Data 3		.713
Data 4		.748
Data 5	.414	.466

 With the two questions (Database 5 and Data 6) removed factor analysis was performed

on each individual construct to evaluate how much total variance is explained. As Table

25 indicates, the Database construct explained 68.8% of the variance using principal axis

factoring with an eigenvalue of 3.441. A significant factor is determined by an

eigenvalue greater than one (29:1). The factor matrix for the construct Database, shown

in Table 26, yielded high loadings all above 0.75. With only one factor, no rotations are

possible; therefore, a pattern matrix was not calculated. The correlation matrix shown in

Table 27 indicates some correlation between the questions. This is expected to some degree since all of the questions relate to the importance of the database; however the questions may need to be reworded to more clearly separate specific ideas.

Table 25: Total Variance Explained for the Construct Database

Factor	Initial Eigenvalues	% of Variance	Cumulative %	Extraction Sums of Squared Loadings	% of Variance	Cumulative %
1	3.441	68.828	68.828	3.056	61.126	61.126
2	.715	14.308	83.136			
3	.379	7.572	90.707			
4	.240	4.808	95.515			
5	.224	4.485	100.000			

Table 26: Factor Matrix for the Construct Database

	Factor 1
Database 1	.755
Database 2	.779
Database 3	.846
Database 4	.756
Database 6	.770

Table 27: Correlation Matrix for the Construct Database

	Database 1	Database 2	Database 3	Database 4	Database 6
Database 1		.496	.575	.757	.562
Database 2	.496		.765	.503	.658
Database 3	.575	.765		.591	.654
Database 4	.757	.503	.591		.538
Database 6	.562	.658	.654	.538	

As shown in Table 28, the data construct was evaluated next. The data construct explained 62.7% of the variance using principal axis factoring with an eigenvalue of

3.134. The factor matrix for the data construct shown in table 29, indicated high

loadings, but not as high as the database construct, that were all above 0.60. Again, with

only one factor, no rotations are possible; therefore, a pattern matrix was not calculated.

The correlation matrix, shown in Table 30, indicates some correlation between the

questions. Similar to the Database construct, this is expected since the questions relate to

the importance of the data, however the questions may need to be reworded to more

clearly separate specific ideas.

Table 28: Total Variance Explained for the Construct Data

Factor	Initial Eigenvalues	% of Variance	Cumulative %	Extraction Sums of Squared Loadings	% of Variance	Cumulative %
1	3.134	**62.689**	62.689	2.686	53.716	53.716
2	.737	14.750	77.439			
3	.470	9.392	86.831			
4	.367	7.336	94.167			
5	.292	5.833	100.000			

Table 29: Factor Matrix for the Construct Data

	Factor 1
Data 1	.718
Data 2	.790
Data 3	.744
Data 4	.605
Data 5	.791

Table 30: Correlation Matrix for the Construct Database

	Data 1	Data 2	Data 3	Data 4	Data 5
Data 1		.593	.485	.331	.666
Data 2	.593		.563	.551	.570
Data 3	.485	.563		.529	.598
Data 4	.331	.551	.529		.424
Data 5	.666	.570	.598	.424	

APPENDIX E: APPLICATIONS USED IN RESEARCH ANALYSIS

The following is a list of computer applications used the analysis of this research.

The survey notifications were sent out using Microsoft (MS) Outlook and used the reminder function set for one week.

The Survey was created with MS FrontPage 2000.

Data from the web survey was filed in an MS Access 2000 database.

Data was exported from MS Access 2000 to MS Excel 95 (MS Excel 2000 was not compatible with SPSS Version 10.1.0).

Data was exported from MS Excel 2000 to Statistical Package for Social Sciences (SPSS) Version 10.1.0 (SPSS) for statistical analysis.

JMP IN Statistical Discovery Software Version 4 was also used.

APPENDIX F: SUMMARY OF LESS FREQUENT USER COMMENTS

Less frequent comments do not have similar significance as comment reported by many users but may contain useful improvements to the civil engineering information system. In addition to the top five comments the users has a list of desired upgrades shown below. Each comment on this list reflects the opinions of less than 15 users, therefore, it they are not significant comments but may contain innovative and useful ideas that should be considered during the next upgrade of any civil engineering information system.

User Requests
- User feels there are too many steps to input/retrieve data.
- User feels the application is not user friendly.
- User feels compatibility/data sharing between other systems is needed.
- User feels application is outdated compared to other products they used.
- User has not received training or training was inadequate.
- Add ability to stay logged into ACES
- Feedback requested on bug or improvement suggestions they submit
- Upgrade the help menu
- Include a spellchecker
- Add an indication of when the system is working (i.e. hourglass)

Users feel that ACES was poorly designed and hard to use because it required too many inputs for a single response. A possible solution was suggested in the comments-- provide drop down menus for easier navigation. The benefits of intersystem compatibility are not currently being taken advantage; therefore duplication of data still exists. Training that was provided to users was inadequate or not existent. If all the users were not trained, this issue needs to be improved. The ability to stay logged into ACES would speed up processing time, especially in areas that deal with customers. The speed

of ACES prevents users from answering customers' questions or processing information quickly. If the speed of ACES in not increased in the near term, the ability to stay logged into ACES may improve customer service, but if all ACES users are logged in, the system's speed may further be reduced. The systems slow speed can sometimes be confused with a unresponsive computer. A simple remedy for this is to add an icon that indicated when the system is working vs. an unresponsive computer similar to the spinning hourglass on Windows. The key issue here is that ACES system speed should be a priority. Civil engineers need to have a location where they can see the status of improvements for all the ACES modules. One user stated he felt "chastised" for making suggestions and a few others stated their suggestions are not heard. A feedback loop needs to be established to, at a minimum, let the user know their comment was considered. Other improvements to ACES include a better help menu. A more detailed help menu may decrease the amount of calls to SSG and let users help them selves. Due to the deficient ACES training, the help menu is all that some users have to learn to operate the system. As with most office computer applications, a spell checker would make a useful addition to ACES.

The research questions lists features that are not contained in the current versions of ACES. The following comments represent a minority (less than 15 responses) of users but suggest the addition of specific features to improve ACES.

Additional Features Requested
- Tracking for warranty information and warranty repairs. (11 responses)
- Expand tracking for IMPAC purchases and IDIQ contracts. (11 responses)
- Include modules for EOD and readiness use. (8 responses)
- Add personnel information such as recall rosters. (2 responses)

The most commonly requested addition to ACES is a feature that tracks the warranty process. This would include time frames for which items are under warranty, warranty documents, and installer and manufacturer contact information. Users would also like a feature that can track IMPAC, or government purchase card, transactions. Currently, users use separate accounting software such as Microsoft Money, Quicken, or Peachtree. In addition to government purchase cards, users would like a more detailed way to track indefinite delivery, indefinite quantity (IDIQ) purchase orders.(the ACES-PM IPT has identified this deficiency). ACES users also have a need to retrieve personnel information. For this information, ACES needs to interface with the installations personnel system, as compared to having personnel information in their database to minimize duplication of data. Lastly, other organizations in CE use systems that could be incorporated into ACES, such as the Explosive Ordinance Disposal (EOD) and Readiness Functions.

The comments outlined below summarize specific improvements to existing features, but again, less than 10 users hold each of these views. ACES Most of these changes should be considered during a routine maintenance of ACES, thus relates back to the comment that a more effective feedback system is needed for users to convey their comments. Some of these comments may be satisfied with the Operations Flight module, currently in development, and some are being worked now as seen in Appendix C.

<u>Specific Improvements to the System</u>
- Reduce the amount of paper generated by RP reports (i.e. ACES journals)
- Add feature to search for project by facility
- Include tie in to personnel information (i.e. POC list for contractors , projects, Email addresses)
- Upgrade Form 1391 (can't enter design/build on block 9)
- Provide immediate feedback on invalid entries (only after saving or exiting are invalid fields identified)
- Correct to allow host nation projects to be reported
- Allow installation to update MILCON projects after reported to MAJCOM
- Upgrade copy project information
- Increase report time frame for CMAS (currently reports only for 1 month period)
- Add tracking of work order and job order information
- Improve tracking of project modifications
- Include IRR and PRV
- Add ability to select information by facility (i.e. parts installed, labor used, RWP preformed, facility managers)
- Allow tracking of facility by letters i.e. 3040a and 3040b, not just 3040
- Allow more detailed project descriptions
- Add capability to attach images (CMAS items) and maps (GEOBASE)
- Add communication support information for MILCON
- Allow entries to be searchable by any number such as Purchase request number, ABSS number, project number, work order number, contract number, work order number, etc.
- Allow cost for X line items
- Track facility surveys
- Increase the characters allowed in the narrative area

Portions of the users' comments were not specific to the type of system; instead, they were applicable to all information systems. These comments do not directly affect ACES but give insight on how the process of collecting and using data can be improved. The following list contains macro-level analysis of information systems used by civil engineers. Again, comments represent the views of less than 10 users each.

<u>Macro Comments</u>
- Inaccurate data in the systems
  - Garbage in – garbage out
  - No enforced policy for ACES use
  - MAJCOMs ask for data that should be in ACES
  - If data is questioned, it will not be used for decisions
- No accountability for changes
  - When and who entered/edited data
  - Will this pass an audit?
- Flexibility
  - For overseas locations
  - User defined blocks, not flexible
- Compatibility
  - Search with key numbers, list all facility numbers for given project
  - Sharing of information between systems
  - Funding info (actual project costs and money received…)

The biggest concern for ACES is that the data is not very accurate. An increased use of business rules may help reduce the amount of invalid responses and increase the usefulness of the database in the future. An effort to validate some past data may also be a worthwhile endeavor, for example validating real property records. Inaccurate data it is not very useful for users to complete their daily tasks or for leaders to make decisions. An enforced policy that mandates users, at all levels, to use ACES is needed. For example if MAJCOMs request the installations list of top priority projects in an Excel spreadsheet, instead of pulling the information themselves from ACES, the bases will not make ACES use a priority. This creates duplication of both data and effort, or with today's limited resources, the ACES entry will not get accomplished. The next issue is accountability. There needs to be a way to track who entered or modified the information in preparation for an audit. In this way, the data will preserve it integrity by not having multiple people update the same record unknowingly. This would have to happen before systems could start to effectively share information between systems. Another issue is

compatibility. There needs to be a common way to relate to items such as projects, by the many numbers each organization puts on them (i.e. contract number from contracting and project number from civil engineering). Also ACES should receive and update other systems to ensure the most current information is available as well as eliminate duplication of data. Lastly, ACES should allow for some individual flexibility, for anomalies such as overseas locations user specific needs.

DISCLAIMER: The following contains raw comments collected during the survey and has not been edited, except for the removal of personal information and vulgarities.

Question 17 Comments

17: In your opinion, the database system you selected above the best to date? If not, what is that database system and why is it better?

1. #17 true
2. ? It is BETTER than WANG or BEAMS, yes, AND alot faster than ACES. It is very slow during the day, since the server was moved to the U.S.A.
3. a good program to have.
4. Access, easier to run reports
5. ACE-PM could be a good system is it was speeded up many fold. It's current speed is glacial. Programming actions that I do take 4-5 times longer than IWIMS used to and the portal path is even slower.
6. ACES - getting more difficult to use than previous databases
7. ACES could be more user friendly in that it is hard to pull data from ACES with only a Discoverer as the only official interface. Although you can use Excel to pull the data also, there may be restrictions on the speed of access and thereby not allowing full use of the system.
8. ACES FD was promised 10 years ago and it's still not out.
9. ACES has innumerable problems with speed, ability to update timely, and flat out ability to update period. Recommend looking at Access as a replacement. It is already available on almost all computer systems, converses well with Excel, Word, and Powerpoint, and probably will crash/have problems less often. Also, should be much faster. The centralized idea just doesn't seem to work very well in practice.
10. ACES has many flaws. It is slow and it's centralized nature at Gunter Annex makes it difficult to function with. Tabular data means very little. Need a mapping capability. GeoBase capabilities are sought.
11. ACES has not been an improvement over IWIMS. It's slow, and will take forever to update everything.
12. ACES HOUSING MODULE IS A VERY GOOD SYSTEM.
13. ACES is better than anything the AF has come up with to date.
14. ACES is good except for slow conectivity. It's the same speed as WIMS was when implemented in 1986.
15. ACES is much better and useful. The reports module could be better or more user friendly. I

16. ACES is really the only one I have used. PCMS was already gone before I started to work in Engineering. At Shaw AFB they use an Access database that was previously able to go back and update PCMS. Now I understand that ability is gone, but the Access interface was much easier to use than ACES.
17. ACES is the best I have used, but I have never worked with IWIMS.
18. Aces is too time consuming. There is no appropriate training programs for it's use. To move a person to a new room tkaes 10 minuets and if you are not on the lan it is almost always down
19. ACES is very slow and difficult to use
20. Aces is way too slow and takes much longer to use than Wims. Wims was so easy to use that it is hard to adjust to the slower Aces.
21. ACES is worlds better than A-106, under WIMS-ES. ACES is slow, slow, slow..
22. ACES itself is a great tool. The problem is it runs extremely slow. Stateside the speed wasn't as much of a problem although it was down often. Being overseas, it takes about three times as long for ACES to process information. Also, if Gunter shuts the system down over a weekend, we cannot use it. For example, ACES never works on Mondays.
23. ACES MIGHT BE THE BEST DATABASE SYSTEM IN THE MARKET BUT, ACES IS SOMEWHAT SLOW.
24. ACES NOT THE BEST YET. IWIMS WAS FASTER, AND WE COULD TRACK BOTH WORK ORDERS AND PROJECTS IN IWIMS. TRACKING WORK ORDERS AND PROJECTS IN SEPARATE SYSTEMS IS INCONVENIENT.
25. ACES PM is a good program but there are serious problems with the bases and connecting to the program. Currently using the web based ACES and the system is extremely slow and there are frequent disconnects (ACES just disconnecting), multiple disconnects per day. The system is too slow to be effective.
26. ACES PM is the best to date.
27. ACES PM is the only CE database system that I have used, but I think that there are still improvements to be made in regards to making more user friendly.
28. ACES Real Property Module
29. ACES seems easier top use and a lot of info I need is being tracked in ACES, which I do not have access to.
30. ACES should of been held off until all the modules were put together and tested. Now Civil engineering has at least 2 systems that aren't talking to each other. This is causing much confusion and cancellation of projects or scopes of work.
31. ACES was implemented with numerous bugs. The various problems should have been worked out prior to conversion. Having to call Gunter to clear these problems is time consuming. IWIMS was faster in regards to inputting information. It was easier to run reports. In the ACES system, there are too many steps that seem unnecessary.

32. ACES/PM (project management) is the best that I have used.
33. ACES-EM will collect and provide the data we need to manage EQ programs at MAJCOM
34. ACES-HM is much better than WIMS or IWIMS. We need additional training in usage of the discoverer. System is snail slow; however, I understand our firewall causes the problem
35. ACES-PM is a better product than WANG's PCD, however there needs to be a submodule that can create DD1391 from data provided by the OSD pricing guide, AF historical construction cost handbook, and the AF real property category code descriptions. Also, an input screen should to be created to allow for the Design/Build line item to be entered in Block #9 on the DD1391.
36. ACES-PM is the best to date.
37. ACES-PM lacks much of the information previously contained in IWIMS. The lost data includes simple information such as work order number. Also missing the ability to search for projects by facility.
38. ACES-PM would be okay except for the constant disconnects and the extremely slow performance. Report writing is hindered by lack of licenses for Oracle Discoverer.
39. Agreed. It's just slow and not as fluent to use as a true windows program.
40. An excel spead sheet is much faster an MAJCOM is requiring an excel spread sheet on environmental budget anyway because ACES doesn't support all their requirements--in other words we are being forced to do the same job twice on two different databases.
41. Answer is yes. However I only use ACES PM (for MILCON Program Management), which I couldn't tell you is a stand-alone database, or part of the Engineering Module. Probably is for base level...or maybe I just never paid attention to what it's called.
42. any thing windows based; IWIMS is archaic and should be updated
43. Appliances require to many steps to input and complete
44. as far as I know
45. As far as I know. The database could be improved to not always going down and maybe could be made faster.
46. As you and everyone in the OCONUS areas knows, the program has alot of bugs in it.
47. Best available to date
48. Best for present work
49. Best so far because it is much quicker, and more user friendly. It could stand to be much more user friendly.
50. Best so far, but still needs to be more user friendly
51. Best to date, but does need improvement.
52. By far it is not. ACES is extremely slow and rarely up and running causing delays in how we do things
53. Cannot answer. Still in initial year of federal emplyment.
54. Commercially available spreadsheets and data management tools are more useful and easy to maintain than the Air Force specific systems.

55. Compared to WIMS it is the best system to date. It needs some more work to obtain information but the largest problem is how slow it is and how much it crashes.

56. concerned with the problelm. The phone number in the listings part can not be changed,

57. Concur, but needs several glitch ironed out to improve access of data and speed

58. Could be a lot better, down to frequently, too long for reports

59. Currently researching other CMM programs such as maximo and comparing it to IWIMS. The idea that I really like about maximo is its ability to track equipment history.

60. Data base is not fully utilized, primarily due to the program's slowness and "non"-accountabilty for maintaining data itself.

61. Database in ACES is not matched with Japanese Off base housing environment. Need to modify the system of ACES, and organize it to match with it. We want to use it to offer off base housing efficiently. info of current occupant, house, map, and so on should be organized in the ACES.

62. Database is much improved over previous system, particularly real time access to knowledge. Could still use imrovements

63. Databases are always improving with technology. Current system is just slow.

64. developed by ACC and updated yearly, so for now is the best available

65. Difficult to use. Antiquated system. Does not interface with the ACES modules.

66. Don't know I only use IWIMS/WIMS

67. dont understand question

68. eliminated. I's a pain in the ***. I don't mind change but to go from good too poor is

69. entering info, and get kicked off.

70. Even with its problems, the previous system was better. At least , we could access information on it.

71. For me it would be IPMIS (Integrated Pest Management Information System) because it is more specific to collecting and forwarding of information specific to my AFS (3E4x3

72. For my experiences, yes

73. From the month that I have worked with it, it is just fine.

74. good

75. GOOD SYSTEM, BUT NOT USER FRIENDLY. HAVE TO KEEP GOING FROM MOUSE TO KEYBOARD WHEN IT WOULD BE A LOT EASIER TO HIT RETURN/ENTER TO SAVE RATHER THAN MOVING THE MOUSE TO AN ICON AND CLICKING. IN PARTS OF THE DATABASE IT TAKES TOO LONG TO GO FROM ONE SCREEN TO ANOTHER.

76. Hard question to answer, the ACES-RP database is new, not all the issues have been worked through. It is vitally important AFIT create an ACES-RP database training course to maximize the benefits, user knowledge and capabilities. At present we call other bases to find out if they are experiencing

the errors, and share how to information. ACES-RP is a full time data entry position within the Real Property Office, manpower should be allocated for this data entry clerk. If the database is your only means of automated information then the information must be correct and current. Locating real estate within the resources flight diminishes it's importance, getting project data from CEC is constant training for Real Property specialists because it isn't stressed as an important process in the project arena. How many engineer's, CE financial personnel, and commanders know that the FY dollars the base receives and manpower are based on correct real property database information and files, so many real property offices are minimally manned, not considered as a priority.

77.   I am a 3E6 working in the Operations flight. The files I use can only be accessed on IWIMS, but most of the other flights are using ACES. The two do not "talk" to each other. We need to all get on board the same system.

78.   I am a MAJCOM-level O&M programmer, so I use ACES-PM to collect data for ILE data calls, and also use it to manage our current year O&M program. I have a Masters degree in information systems, so I am familiar with what is technically possible with modern systems. I have also spent several hours discussing the ACES-PM system with the SSG technicians at an ACES conference, so I am familiar with the history of the program. In my opinion, we are wasting scarce resources by continuing to cobble bits and pieces onto ACES, which is really just WIMS transferred onto modern hardware. We really need to make the corporate investment to study how we use our information systems, and then have someone design a new system from scratch. For example, ACES-PM is built using Oracle, the same software that is used to run most major internet businesses. However, ACES has an extremely clunky interface and many performance penalties that you'd never see at a for-profit website. Beyond the poorly implemented interface and logical design, the biggest problem I see is a lack of standardized policy relating to the use of ACES-PM. For example, an AFI describing how and when to use ACES would resolve a lot of our problems.

79.   I can find in dept info on work orders tied up to the project. aces only has info on w.o. number and that's it. No in depth info on w.o.

80.   I can not compare with other database system, because material control need only IWIMS/WIMS.

81.   I do not unserstand this question as written. If you are asking is this the best system I have used, the answer is a resounding "NO". The Army HOMES system is far superior. It is much more user friendly. It is easier to enter data. It is easier to retrieve data. It doesn't take "minutes" to move from screen to screen. You can have more than one screen open a time. The appointment scheduling module is much eaiser to use and maintain. Printing daily schedules is eaiser. Report extraction is better. Over all, HOMES makes ACES look like a program from the early 8O's.

82.   I dont beleive that my database is the best tool for my job but I havent used any systems that would work for all of the CE requirements.

83. I don't have better alternative but I am sure one exists.
84. I don't know if there is a better database available, but for a custom designed database it does not meet overseas requirements very well.
85. I don't know of a better system, but I believe the current one can be improved.
86. I don't know of a better system.
87. I don't know of any other system, but this one need lots of work. It's a pain in the but to use, it's slow and usually doesn't work. Not very user friendly either.
88. I DON'T KNOW, USE ONLY THE ONE SYSTEM
89. I don't know. IWIMS/WIMS is the only database that I have used. Therefore, I have nothing to compare it to.
90. I dont know....I have never used any other.
91. I don't think any of them work very well.
92. I feel I preferred the old database system, the Project Contracts Management System (PCMS) because it's much easier and accepted the input quickly after entering the updates.
93. I found IWIMS more user friendly and faster. You didn't have to save after every step. You could do everything you need to do on the person and then save one time. Would like the reports to link from predefined to advance and vise-versa.
94. I have been in the EOD career field since ACES came online. My last experience with wims was in 1998. That system needed to be replaced.
95. I have never used any other databases, but I can see how ACES coulbe improved and made to be a great working system
96. I have no reference
97. I have not been trained or used any other data base system. 12 years with IWIMS/WIMS
98. I have not seen a better system. That is not to say the current system satisfies my needs adequately
99. I have nothing to compare it to. I am trained in IWIMS and I use it daily.
100. I have only used IWIMS, So I don't have anything to compare it to.
101. I have only used the ACES database
102. I have returned to the CE world from a special duty assignment and thus I feel this database provides needed and critical information to assist me with doing my job. I don't have a lot of experience with the other types of databases.
103. I have taken a class in ACES, but use IWIMS to retrieve date because to the best of my knowledge only a few people in the group are allowed to use ACES. ACES seems more helpful user friendly, but I took the class so long ago I am not sure why I have that impression.
104. I haven't used any other database systems to date
105. I haven't used the others...I can't compare
106. I like the data base a lot better than IWIMS. The setup and screens are user friendly and the report writer saves a lot of time once the shell is created. The major problem I have with it is the speed that it runs. While ACES has the ability to make my job much easier and it does, it does not allow me to do my job faster.

107. I ONLY HAVE EXPERIENCE OF THIS PARTICULAR SYSTEM.
108. I only know this system ,so I cannot answer it truefully
109. I only use the selected o
110. I prefer a Microsoft Access "front end" to the Oracle database as it much much more flexible than ACES Discovery. Also the use of an Air Force wide web based database if destined for frustration and failure because being so large it takes too much time to input data, run queries but most importantly the connection is very very unstable..that seems to be ingnored by Gunter because of "it's not my job" mentality. (period, dot)
111. I preferred WIMS - as it was faster. The information face is not as important is time saved - even seconds can cause frustration to myself and customers as I try to pull information of the system. PS - I am over seas....
112. I really don't have anything to compare APIMS to. It is the only Air Emissions and tracking database I have used in this field.
113. I THINK DIMS IS STILL MORE USER FREINDLY. WE CAN GET REPORTS AND DATA OUT MANIPULATE THE DATA MUCH EASIER.
114. I think IWIMS is a great system. However, it can use some improvements to facilitate the location and interface of different files.
115. I think IWIMS is better
116. I think the current ACES PM is a good tool to manage the Civil Engineering Project Data, but it is complicate to use and takes long lead time from pulling out the data to finish the update.
117. I think the data base could run a lot more faster that it does. That is really time consuming.
118. I use a back up system with Access and Excell spread sheets to track my information. Most of the time we can not access ACES over the internet. We are not on a LAN system. Sometimes it maybe 2-3 weeks before I can open ACES.
119. I use ACES and it needs a lot of work to make it completely useful. I think the "hiccups" created and encountered by the transition from IWIMS to ACES is the reason for the problems I experience.
120. I use it to enter my IMPAC status. It works for me.
121. I use IWIMS to help customers track their work orders. I have seen ACES & need to use it more. ACES looks to be much more user-friendly & familiar (windows-based) than IWIMS.
122. I use the IWIMS system but the reliability of system connection needs to be improved.
123. I use the wims system. I've used other data bases, but I'm not sure what type it was. I like the other data bases better than wims because it was easier to merge with other microsoft office documents.
124. I using daily this system for check work order,RRI/accounting code & shop rate, etc.
125. I wish it was faster.
126. I'd hate to think this is the "best to date", but it IS the best Air Force Project update database I've seen so far. It is still far from being user friendly.

127. If it worked the way it supposed to it would be a great tool.
128. I'm not sure. I'm not familiar with any other databases thatI can compare it to
129. IM REALLY NOT SURE WHAT THE DATA BASE IS.
130. In Korea, Host Nation Funded projects cannot be correctly reported. MILCON projects cannot be updated once you report it to MAJCOM.
131. In my opinion this is not a user friendly program-
132. In regards to parts management, it would be beneficial to link our database with a nationally recognized parts database (i.e. Graybar or Grainger). I waste a lot of time creating CSL's for items that already have a manufacturer's part number.
133. In some areas I prefer IWIMS as it will stay open all day. In this position we need it at various times and ACES shuts down within a few minutes of non activity. It takes up to five minutes to get back to the page you need, five minutes doesn't seem long until you have a customer at your desk waiting for it.
134. IPMIS because you can modify the database as needed. The Entomology module is fixed so nobody can modify except Hq and they won't
135. It assists me in my daily duties
136. It beats the slow, cumbersum ACES screens.
137. It collect data on work accomplished by Operations. Also, it is used for researching w/o #
138. It could be upgraded.
139. it is a good system, if people where trained to use it better
140. It is a good system, just not trained properly. We need an AF formal training course for CEMAS.
141. It is better but very slow.
142. It is better than BEAMS
143. It is better than the old IWIMS. I used this for A-106 entering.
144. It is better than the previous WIMS systems
145. It is fine
146. It is for what it's designed to 'hold'. There are many disconnects in the programming code that make inputting information difficult and it is very slow.
147. It is not because it is too slow and sometimes info gets lost.
148. It is not because it is too slow and sometimes info gets lost.
149. It is ok.
150. It is okay. But too slow. The DIMS database was much faster and user friendly
151. It is questionable if this system is the best to date. The connection times to access and update information negate any "improvements" in the visual appearance. The system as it was sold was supposed to cross-reference different modules. I haven't seen that happen, and users have given up trying to maintain multiple databases (IWIMS and ACES). It is often easier to collect what information you have into Microsoft Excel or Access and manipulate it that way.

152. It is the best
153. It is the best available to me at this time. I belive a database simliar to Access, that is easier to write reports would be better. Also would like a system that processes info faster. Somtimes I'll sit for several minutes waiting for info to come up on screen.
154. it is the best availible.However vast improvements are needed to make it less cumberson and more user friendly.
155. It is the best for the particular system I work with that I am aware of. I am aware of better options for other modules I no longer use.
156. It is the best I have seen so far. My section does not use the platform to retrieve the information because it is easier and faster to do it with paper files.
157. It is the best so far.
158. It is the best that I have used so far.
159. It is the best the Air Force has produced to date.
160. It is the best to date, but still far from adequate. It operates slowly here in PACAF due to what I understand is a physical infrastructure limitation - this is a deterrent to using the system, whcih results in inaccurate data. Since the data is unreliable, the database serves merely as an initial reference before ultimately having to contact the base (I work at the MAJCOM) to confirm info such as CWE, funded or unfunded, project status, FIM rating, project description, etc.
161. It is the best to date. But, it still has several problems.
162. It is the only I've ever used.
163. It is the only one I have used.
164. It needs to be in a Relational Database
165. It probably is not the best as far ease of access and being able to get at your data in the least number of steps. However it probably is the closest we can get to tracking all the information we need.
166. It seems that there was more fields to update in the old database system plus more options to choose from when updating fields
167. it works
168. It works
169. It works very slow often. Also it kicks out of system too soon. Preferably anytime I want to check the information, just check the info instead of logging in every time.
170. It works, only thing sometomes it hard to get on and takes awhile to get the info.
171. It would be extremely difficult to compare or choose a better system, since IWIMS/WIMS is the only database I have worked with.
172. It's a great improvement from the IWIMS, however, trying to maintain an updated data at all times from 1 to 2 people can be hard. Still trying to learn to correct some errors on the database and the discoverer program for extracting reports.
173. It's a lot better than the WANG

174. It's all I've ever used to do my job. I have know experience with other database systems.
175. It's always a tradeoff. I like Access better because I can work with all the data versus one small, very slow piece.
176. It's not the best, but I('m not sure what would replace it.
177. Its ok
178. It's slightly better than IWIMS
179. It's the best up to date, but it still is lacking a lot.
180. It's the only one we have to date
181. I've had more problems with the web-based system than what was on the network before.
182. IWIMS
183. IWIMS and ACES is too slow to update and not reliable.
184. IWIMS could use a spell check function and have the facility manages connected to facility have a drop down box to find all associated managers. writing reports should be simpler , but since I don't work with other database at this time that's all I have on this subject>
185. IWIMS got rid of some good features available under the old WIMS - Warranty program info and easy report writing were the two biggest things lost. I've seen a presentation on an Oracle-based work order system that Eglin is using (can't remember the name) that looked to have a lot of useful features and is used by commercial industries.
186. IWIMS HAS THE BASIC INFORMATION BUT NEED TO BE LINKABLE TO A MICRSOFT EXCELL TYPE PROGRAM
187. IWIMS in my opion is very slow. Don't know of other systems out there but I'm sure there is something better.
188. IWIMS is a good tool. Speed could be better
189. IWIMS is better (assume having all the rights)than ACES PM
190. IWIMS is better than ACES. Only wish IWIMS stil had more user friendly reports and features. Aces concept is great, but too slow and too mant keystrokes
191. IWIMS is constantly slow or shut down for service. Especially during duty hours, making it dufucult to perform my job by taking work orders.
192. IWIMS is crap. And we've been waiting for ACES for so long it's going to be outdated by the time it does arrive.
193. IWIMS IS GOOD AS FAR AS MAKING MOST WORK FASTER TO LOCATE AND INPUT WITH MINIMUM MISTAKES
194. IWIMS is hard to navigate. I don't use any other database.
195. IWIMS is plagueed by OS errors, we cannot rely on the system to be operatational. We have lost valuable data due to system errors, the inability of the system to function properly has cost the AF time and money in wasted man-hours. The system does not captured all required fields of data such as Affirmative Procurement data (Exec order 13101). BY LAW we are required to purchase a specified list of materials (which is under constant review and update) that contain a specified % of reclaimed or recycled materials. This

data that needs to be captured is an essential element for any Wing to meet their waste reduction goals. Also, at a minimum, WIMS should be able to interface with the supply database system and the pharmacy database system (EMIS) for a more accurate and efficient purchasing. A lot of time could be saved by shop personnel if they were able to review their authorizations to buy haz materials on line. They would know when there authorizations were due to expire and could complete the necessary paperwork in a timely manner, vs. finding out their authorizations had expired when a mission essential item needs to be purchased. A simple database querry at supply could save a shop valuable man hours if they knew the items they needed to purchase were not in stock. Also, several of the fields character size need to be increased, such as "conf with" field, and the "extra info" field. Also, add a field to show "Hazardous Control Number" , "Affirmative Procurement Item" (Maybe also include % of recylced materials required in Noun record), and "Shop Authorization" fields. Also, need to increase the number of fields available for Vendor file, need additional lines for fax number, cell number, and GSA contract number and expiration date. The addition of these fields would improve the buysers purchasing time.

196. IWIMS is the best system so far, more improvements can be made but with ACSES on the horizon I don't see those improvements being accomplished.

197. IWIMS is the best to date until the conversion started for ACES. Our Building managers files have been ruined as a result of ACES being brought on line. We've had to use a different data base to update building manager informtion.

198. IWIMS is the best.

199. IWIMS is the only data base I'm familiar with and have used.

200. IWIMS is the only data base that I know.

201. IWIMS is the only program out of the selection above that I have ever worked and it a nice program.

202. IWIMS IS VERY USEFUL DATABASE FOR MY DAILY TASK.

203. IWIMS isn't perfect but don't know of another that would be better

204. IWIMS was a more user friendly program.

205. IWIMS was better because you were almost always able to get the information updated. ACES is constantly having problems updating information.

206. IWIMS WAS BETTER DUE TO IT USER FRIENDLY NATURE AND RESPONSE TIME. ACES HAS TRIPLED THE TIME REQUIRED TO DO ROUTINE TASKS DUE TO THE SLOW RESPONSE OF THE SYSTEM. IT'S NOW MORE FRUSTRATING/COMPLEX WITH PROCESSING RULES THAT CHANGE WHENEVER THERE IS A PATCH OR RELEASE. COMPLEX MEANING MULTIPLE ENTRY SCREENS FOR ANY ONE GIVEN TASK THAT USED TO HAVE ONLY ONE ENTRY SCREEN UNDER IWIMS. I FIND MYSELF USING IWIMS MORE TO GET THE DATA I NEED QUICKLY. WE GOT PROBLEMS FIXED FASTER UNDER IWIMS. WE STILL HAVE PROBLEMS WITHIN THE

ACES-RP MODULE. THE LAST PATCH/RELEASE WAS ALMOST A
YEAR AGO ACES-RP FIXES ARE LOW PRIORITY

207. IWIMS was better, there was less steps for data input, and it had occupancy reports that worked. ACES has additional information, but is not as user friendly./
208. IWIMS was easier to use in the Housing Module.
209. IWIMS was faster. You could put in many listings using the same information with out
210. IWIMS was much faster and contained information that is not in ACES-PM. Also, report writing was much quicker/easier in IWIMS.
211. IWIMS worked much better and faster than ACES/PM. It was easier to use command or base defined fields. The report function could pull all data and wasn't limited to data from 3 folders. IWIMS was linked to work orders and roof and paving inspections reports/plans. ACES is not. ACES is incredibly slow and unreliable. Printing from IWIMS was much faster.
212. IWIMS WORKED MUCH BETTER THAN ACES/PM. IF THE BUGS AND PROBLEMS ARE ALL FIXED IT SHOUDL WORKL BETTER THAT IWIMS. AS IT STANDS NOW ACES IS DIFFICULT TO WORK WITH AND TIME CONSUMING
213. IWIMS/WIMS does not represent the best database system to date. Do to the failure to complete the transfer from IWIMS/WIMS to ACES--I must use two systems. Furthermore, the lack of user training inhibits my ability to generate information from the data contained in the database system. Also, the hardware infrastructure scheme (database system and data accessed through a wide area network) causes needless delays and down time. As a second level supervisor within an operations flight, I work extensively with infratstructure resources (water and wastewater works). Several off-the-shelf asset management systems (e.g., CarteGraph's products or ESRI's utility GIS systems) offer higher degrees of flexibility (e.g., ease of use, common query capabilities, pre-formed data entry templates, etc.).
214. IWIMS/WIMS was better due to the speed and layout of entering and retrival of data. The screens/pages were fewer and easier to understand.
215. IWINS is the only system I used for CE, so I can't say which system is better
216. IWMIS would be a great system if someone would stop trying to pad their pockets and let our systems folks update the program. It has been stated that IWIMS can be updated to today's systems (including all the bells and whistles) if someone would just let them do it. Instead we are trying to replace IWIMS with a contractor off the shelf program that satisfy's nothing but someone's profit sheet. Somebody really needs to wake up.
217. many pages to search from to enter information. Too much information to search through.
218. Maximo is a better system. It is Windows based, self explanatory, user friendly, easy to query and manipulate data -- which means the data gets used.
219. Maybe, I think that a version of Microsoft Access maybe utilized more effectively. Although I admit I don't know all the aspects of Access. We

currently use Access to track several forms of data, that is tracked with Whims as well, ie supply, RWP, Equipment operational status, (to include malfucntions identified and parts tracking status.. Access appears to be more user friendly.

220. n/a
221. N/A
222. n/a
223. n/a
224. n/a
225. N/A
226. n/a
227. NA
228. Needs some improvements. Way to slow. Certain information isn't collected in it.
229. never worked with iwims. only with jumps finance and wang in lodging.
230. NO
231. no
232. No- ACES Work Order System will be better if it is anything like ACESPM.
233. No all the systems need to be faster
234. No answer.
235. no basis for comparison
236. No because it is not user friendly and it is very hard to muniulate the data to give you the informantion in a format which is most useful
237. No because it is not very user friendly. It also does not interface with the Operations Work Order program so you do not have a cross reference between project numbers and work orders.
238. No choice of alternate system. Windows access or similar would be better
239. No comment
240. No comment
241. No comment. I haven't used any other system but the ACES RP Module in this job.
242. no complaints.
243. No it is not best todate.
244. No it is not, as it lacks up to date capabilities that could improve its usage. The IWIMS system had some freatures that made its use easier.
245. No it is not. It has been worked on for several years and there is a better verion avaiable, but se still do not have it. The system should have been designed in Access, not Oracle.
246. no its not the best. I think peachtree accounting software is much better because you cankeep better account of everything that my job needs to keep account for.
247. No IWIMS was easier to use.
248. No-- IWIMS/WIMS are only tracking systems. Many commercial of the shelf work management systems offer much more. Paragrin, Maxim all are easier to use and provide more service. ACES is already out of date and it's not even

fully fielded. We need to really look at other systems without being so coloquial.

249. no opinion
250. No Opinion, only system I've used.
251. No opinion.
252. No other CE Database experience
253. No the database selected above is not the best to date. Any database with current technology is better then IWIMS. IWIMS is to slow, not very flexible in regards to RWP and LABOR. Still uses function keys as the main source of navigation. Using a current database like MS ACCESS would allow for greater interaction between the database and the user. It's indexing might even speed up searches, which with IWIMS right now takes 10+ mins to find open job order for a facility.
254. NO! I actually prefer the old PCMS/PDC in IWIMS. The ACES module requires more steps to find the projects I'm interested in, and does not have a report writing utility to easily access data.
255. NO! It is the worst ever created.
256. No, A106 was better and easier to use
257. No, ACES-HM is good, but there is a lot of room for improvement. We all make mistakes in pushing the wrong button. We should be able to retrack our selection. It would be great if we can simultaneously work on different windows. We need to process reports or forms faster than what is currently offered.
258. No, Almost anything is better, IWIMS was better, ACESPM has many problems which prevent simple inquires. Example: if a project is loaded in ACESPM with a Multi Facility and I need to search for a facility by facility number it won't find it. You can't search ACESPM data by W/O numbers. Then the fact that it doesn't interface with IWIMS adds to the problem. ACESPM has made my job 10 times harder! Programmers are having to create seperate data bases to keep track of work request and the project numbers assigned to them! They also had a problem with updating the system after they submitted the project which left 75% of projects in the Ready to Advertise status even after they were being worked! As you can see I'm not too happy with ACESPM
259. No, I have used other much faster database systems.
260. no, I like using the microsoft access program because it is faster, real time, and can be modified to suit my needs.
261. No, I liked IWIMS better. It was geared for Real Property and didn't create so much papers for our record keeping. The reports were geared for what we needed and easier to work with.Real Property input screens are so much easier to work with. The transaction journals come out all on what page verses multiple pages. We lost alot of report information and cannot recover them.
262. No, I liked IWIMS much better. IWIMS was faster and more user friendly. There are too many steps involved just to terminate someone from the system. In IWIMS, there was just one step. There is also no history file for previous

occupants. The off base listing for houses does not work at all. I am very upset at the lack of training that we received for this system.

263. No, it could be faster. Updating information is slow.

264. No, it is an Access database and the bases to do not have access to it, so I spend all of my time updating with the bases data. I have to collect most of the data myself since ACES is not used properly.

265. no, it is an old dos based system that crashed very easy with poor interface

266. No, it is sadly outdated. It is down or slow far too much. I'm unfarmiliar with other systems, but I'm sure the military could find a better system.

267. No, it's not the best to date. It's very difficult to push and pull the information that I need back and forth between the database in a timely fashion on order to maintain and accurate and easy to use information (for multiple users/reasons).

268. No, IWIMS was an easier system to use, enter data & correct erroneous data

269. No, not really. Data base created by MS ACCESS, or updated IWIMS is better. IWIMS in Yokota AB is too slow, and items don't much to our business.

270. No, not the best to date. I don't know exactly what would be better

271. No, not user friendly. Don't know of a better system

272. No, the data base could be much more user friendly.

273. No, the IWIMS was better, because when we added new fac/bldgs to our report, all the data appeared on one page for future reference. Now, same data appears on many separate pages in small screens like this one, where you can only read two lines at a time, so if you want to read everything, you have to print two lines per page at a time. Because of ALL the papers, it is difficult to find what data was added/changed/deleted and its affect on other items. And in WIMS the transaction journal was easier to read and find when/what changes were made, but in ACES, the journal lists every transaction that was done whether real property or not. IWMS had one real property screen to work with where all data was seen at once, ACES has many screens which I have to remember to update or mess things up if I forget to update a screen. IWIMS was SIMPLE to work with compared with ACES. With IWIMS I rarely called for help, with ACES we have to ask for help often, which makes us feel we are not in control of our records. Maybe ACES works for finance, but it certainly did not improve real property recording. Did anyone ever consult Real Estate on what we needed for our work??? And where do we file the mounds of paperwork generated????

274. No, the previous project management module in IWIMS was more functional than the current ACES-PM database. IWIMS was a little more flexible as far as exporting data which was usually exported into a ACCESS or EXCEL to be better formatted into more usable hard copy reports. Neither IWIMS or ACES-PM is as user friendly as the limited exposure I've had with various ACCESS databases, of course I've never used ACCESS for a full scale real property maintenance database management system.

275. NO, THE WIMS SYSTEM WAS SUPERIOR IN ABILITY TO INPUT INFORMATION AND TO RECOVER SAME. ACES IS CUMBERSOME AND WILL NOT READILY ACCEPT DATA.

276. No, There are limitations with the IWIMS program, I have used the Real Propety ACES and I'll be D*&^% if that program is going to make my life easier. ACCESS, much more user friendly

277. No, Wims does not allow the user to easily define reports and search the database. An access type system would do this job easier and faster.

278. No, Your question is worded wierd

279. No,hard to change due to changing regulations. Other organizations don't have access that could be inputing inportant information

280. No. A locally generated MS Access program was a better design. The ACES-FM module still has too many problems, and does not provide all the functions that the WANG system had.

281. No. Any number of COTS solutions provide an architecture, an interface and reporting that is probably 3 years ahead of what SSG is currently providing.

282. No. Anything is better than IWIMS/CEMAS. It is an antiquated system which is nearly impossible to learn fully. Report writing is a nightmare. Data is not auditable because there is no history associated with the data (ie if there were 5 changes made to a w/o, you can not check to see who made the 5 changes - you can only check to see who made the last change).

283. No. CEMAS, it's not programmed to handle all purchasing situations.

284. NO. Excel Spreadsheet is quicker, easier to change, more forgiving.

285. No. I don't know what database would work better. My only previous database experience is with an old DOS based system and MS Access. I would not reccomend either

286. No. I liked IWIMS better since I could search workorders and bldg numbers. In IWIMS if you had multiple facilities on a project each facility number was in the project. ACES does not seem to allow this. We've had several cases of doulbe programming.

287. No. I would guess an Access database would be more friendly. Doesn't help that not all the needed information is inputed about items in it either though.

288. No. It doesn't provide some of the information we were able to gather under IWIMS

289. No. It's a good start, but needs more improvement. The most important change would be a speedier connection.

290. No. its slow

291. No. PCMS. Easier to input data. Rights provided the user is easily identified on the particular screen chosen. ACES system has what looks like open fields for data input but may not accept inputs. Only after saving or exiting system will it identify an input not accepted. System is slow overall. When data is entered or selecting a program, there is no indicator of system search/processing, ie hour glass, curser, etc.

292. No. Pls see comments at end of survey.

293. No. Program is to vast...to much data fields. Management doesnot understand all the program steps and the data just confused everyone. PDC was sufficient enough however the problem still remains that the data is to confusing for upper management to understand.

294. No. Some is good but WIMS was faster and user friendly

295. No. The military is behind in it's programming needs, although it is generally understood that our system is unique. Our newer systems need to be more user friendly, i.e; similar to Microsoft Access programs, or a hybrid of Acces and Excel, taylored to each cell of IWIMS/WIMS. We need more flexibility and independance from the central database.

296. No. The new ACES system should be more user friendly.

297. No. The old IWIMS system had its problems, but it was much more user friendly. There are too many steps to take to access information in ACES. Also, you have to enter the 4 digit prefix each time you enter a project number. This is especially true when working on the net. I tend to pull up projects from other bases. Scrolling from the top of the screen to the bottom and then back to the top in order to access the applicable buttons adds to the time spent in researching project information.

298. No. The previous WANG system provided much more concise data and easier to retrive. You cannot run reports directly from the database without having to go through goatropes. The data base lacks controls fields that would make sorting information easier.

299. No. The system keeps crashing. I don't know what database would be better.

300. No. Why not use an Access database.

301. No. WIMS was user friendly and was simplier than ACES. Information was easier to read and compressed pages together rather than one item per page (EX: House Rentals). When we had WIMS we could ask it to print out a entire rental listing at one time. You are lucky if it prints out each location one at a time before locking up or enable to print, etc....

302. No; the manufacturer makes a web based system that would give real time inputs instead of file data transfers that have historically caused data corruptions and time lost/invested in repair.

303. no--IWIMS

304. not enough experience with the other systems mentionsed here to answer correctly. but if I need to put an answer, then I would say SBSS, for the simple reason that it is more direct, where IWIMS takes the more roundabout path to get the same thing done, thereby taking up more of my time

305. Not familiar with any of the other modules.

306. not necessarily. The Aces Module we use seems to be geared more for MCP Program Project than for O & M. We at Base level do not have sufficient rights to update fields designated for MAJCOM to update.

307. NOT REALLY, IT COULD BE A LITTLE FASTER

308. NOT REALLY. ESPECIALLY, CREATING REPORTS IS DIFFICULT.

309. Not really. It is slow and difficult to work with. It is limited by the characters allowed in the narrative area. Even with Discoverer, it is not easily used for reports. An ACCESS based database would be better.

310. Not sure

311. number with out having to wait for the down time for the program to search. Too many

312. OK, but way too slow. Needs better report capabilities.

313. One word, the fastest.

314. only one have used, I would like to see one more user friendly

315. Only one in use at thie time.

316. Only one I've used

317. Only one to compate with is PDC, which was easier to use and access.

318. Only one, I can use.

319. ONLY SYSTEM I HAVE USED.

320. only system that I have used

321. Only the WIMS/IWIMS is/was on a par with ACES, and ACES -- overall -- is a better data base.

322. Partial to Excel but that would have to be worked into another system to make it work.

323. PCMS was better. It was faster.In war you may have a more powerful rifle than the enemy but if it takes too long to load, fire, use...your dead as your boss just fired you...!

324. PDC

325. Plus, commander I just left stated in so many words, if you can't maintain this (required) database then make one you CAN!!ie,do duplicate system(Access,XL)double work!

326. previous versions of WIMS have been more user friendly and more reliable; we experience a significant amount of downtime due to computer problems and delays.

327. prior to this housing job i dealt with iwims(that was much better than aces for that job) now that i'm in housing, a program called dims (an access program) runs circles around aces and with out any delays or disconnect for any reason. many reports that i need i find myself constantly going back to dims for it due to aces internal problems

328. Programming

329. project progress update

330. Question is missing some words, but I think I know what you're asking. I use ACCESS to pull data from ACES-PM. Once I have the data, I use ACCESS to present the data in a format that's user-friendly to me and my branch. Not saying ACCESS is better, but I don't have a lot of experience with ACES-PM...it may be able to do the same thing that ACCESS can...I may simply lack the knowledge to know how to do it.

331. Recommend you fix the question. Fourth word should be "is"

332. ridiculous. The thing I hate the most is being kicked out after 1/2. Sometimes I will be

333. right now I don't use the date base, it is riddled with problems ie. logging on data input and ease of use.
334. Right now I think IWIMS is better than ACES. ACES is so slow and not very user friendly.
335. self-created databases; freedom to collect and change data as necessary
336. So far it is, I've started using this Data Base for only four mouth.
337. So far, the best system in the past 18 years.
338. So far, Yes
339. Some of the built-in features cause you more work. For example, if you forget to "submit" the project before adding quite a bit of data, it won't let you submit the project, even though the resulting data is accurate ... it's just not appropriate for the set parameters. You must undo some of the correct data just to make the submission. We're having a problem where HQ AFMC/CEV guidance for environmental projects is to add them as fund type "O&M". However, it messes up the HQ AFMC/CEP FIM data collection because it thinks these environmental projects are really O&M funded projects. Even though there is a subset of Fund type for environmental under O&M, it's not the one shown on the ACES project summary page, so it isn't as useful as it would be if they were coded ENV right from the start. Since the databases are merged into one, it makes it more difficult to sort data in subsequent reporting.
340. Some what, IWIMS used to have housing incorporated within it. I used to do work in a field that I had to have access to housing and when ACES Housing Module was intorduced it made my job allot harder.
341. Somewhat agree.
342. starting all over again each time you entered a new listing. You could change a phone
343. steps to accomplish the same thing we did in IWIMS with fewer, less complicated steps.
344. Sure its fine but you're asking the wrong question
345. SYSTEM INDIVIDUALLY USED UTILIZING UNIX WAS BETTER. IT WAS FASTER, EASIER TO USE AND TRAIN PEOPLE ON. GETTING INFORMATION/REPORTS IS SLOW AND COMBERSOME. IT IS NOT USER FRIENDLY, GETTING PULL DOWN SCREENS FOR DATA FIELDS OFTEN IS AWKWARD WITH SCROLLING REQUIRED OR OTHER CONTORTIONS NECESSARY TO MAKE THEM WORK.
346. System is adequate but operates too slowly.
347. The ACES database system is the best system I have used to date.
348. The ACES RP is the only database system that is used for Real Property accountability. It's not the best, it's the only system we have.
349. The ACES-PM is woefully slow, with unreliable connectivity. Copy project function is completely inadequate. Features are very limited in what the can do as opposed to what they should do. It is apparent that the system was pressed into service before it is ready to be used.

350. The AF-EMIS system is not the best. Many problems, too user un-friendly, too many screens-in and out all the time. Much trouble running reports. The program has a report system that is 6 years old. The team that came to train us on it could not configure need reports! I perfer to use the home-made system our Office Automation Clerk has developed. It have on srceen entry of all date and we can pick and choose any part of the data for report that we want. His system received for him a Profesianl Performer award from the last external EOSHCAMP inspection. At this time we are mearly population the AF-EMIS system with infor mation no one is using. We hope to solve this problem with the new 7.3 program coming out in Feb.

351. The best so far. Trick is getting it up to date and keeping it there.

352. The best way to obtain ACES (Project Management) dadta is through Oracle Discoverer. By exporting the Discoverer report in htm format, the Escel report is qickly available and far better than the direct Discoverer to Excel report creation. Access report may be an even better database.

353. The best way to obtain ACES (Project Management) data is through Oracle Discoverer. By exporting the Discoverer data through htm format, Excel spreadsheet conversion is very simple. Access might be an even more useful database to use.

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361. The current database system is effective--but network failures often stall progress

362. The data base system is better than the I-WIMS but the responsiveness of the system is far below that of the PC based or locally based server. The bulk of the time that I spend on the system is spent waiting for the system to respond and not entering or manipulating data.

363. The database is a tool and like any tool has limitations. Knowing the limitations allow knowledgeable users leverage the tool to meet our requirements.

364. The database is an excellent tool. I feel that we can all use training on it. There are probably some areas that could help us see how we operate and we could improve these if we had the training on IWIMs. In my AF time, my training has been more self taught and what someone wanted me to know, but not really how the system should work

365. The database system I now use meets my needs, there could be some updates and changes that would allow for better usage

366. The database system selected above in #16 is better than the previous system (IWIMS/WIMS), but there are many areas where it could be improved upon.

367. The information in IWIMS is very usueful could be improved by letting ACES PM feedback project numbers

368. The Internet ACES system substandard to its predecessor the client version. It is extremely slow and not user friendly. Functions that worked well in the client version have been changed so they are hard to use in the Internet version. The system was forced on us whenever someone complains we are told it is because of our internet connection even though many of problems in no way relate to the connection but instead to how the program is set up. It takes 4 to 5 times longer to enter a project in the Internet version if you are able to enter it at all. I had very few complaints about the client version but can not stand the new ACES.

369. The IWIMS database is far from the best there is. Besides being terribly outdated, it is not very efficient. This computer technology is around 15 years old; surely, there must be a modern method of inputting this information. The ACES system seems to be a bad joke; it's been talked about for years, but apparently whenever it finally does come online it will be obsolete technology as well. This is what we all have to look foward to in this job within the Air Force. How would you feel?

370. The IWIMS system for operations is outdated and needs to be brought into a windows format similar to the other ACES products. The sytem is inflexible...report writing is cumbersome...data cannot be retrieved in a fashion to help answer questions and complete tasks.

371. The IWIMS system is fair but when system was converted from WIMS to IWIMS we lost a lot of data pertaining to reports that were canned

372. The I-wims system was better, took less time, was simpler to operate.

373. The non-internet version of ACES is much faster and relyable than the online version.
374. The old WIMS system had its idiosyncrasy, but the new ACES system is slow cumbersome, not logical, undependable and unreliable and no training was ever conducted. The training in the programs use cannot compensate for the lack of speed, time outs and being kicked out, ands the lack of transfer of data.
375. The only benefit I see to IWIMS over the manual system used when I came in is the ability to pull information quick.
376. The only one I have experience with.
377. The only other system I've used it the IWIMS for tracking projects. The new ACES system is good, but VERY SLOW! ACES is 4 times slower than the older IWIMS system. Also, the current web based ACES doesn't allow a user to change their password like the old IWIMS system did. Passwords now have to be changed through our system administrator and it's up to them to make the password instead of the individual picking their own.
378. The original WIMS system was better because it had much quicker response time and less down time. It was also easier to navigate and had better documentation.
379. The problem with ACES is entering data takes forever. I'm in charge of developing flight budgets and enetering the information into ACES. I'm tired of waiting forever for ACES to update fields and display drop down menues. Not sure if this is just a PACAF problem as I have not used ACES in CONUS.
380. The question is a non sequitur. The system needs to be much more intuitive and user friendly, such as a Windows-based program. You need instructions handy every time you use it.
381. The speed in ACES-PM needs to increase dramatically. PACAF bases are suffering from the sloth database. ACES-PM drives FIM and IRR, so $$$ need to correct the problem soon
382. The system has too many problems that cost us time. In some instances work done by others is not always accurate and complete an impossible for us to go back and correct.
383. The system is very helpful.
384. The time it takes to get info is to long. If I want to run a work report it might take me a hour or two just to get quick info. The IWIMS and aces programs need to be more intergrated so I can find info on both systems without having to switch back and forth.
385. The wording of this question is bad. The best data base system I have ever used is the access data base.
386. They are all inadequate, but ACES is the worst. It is unreliable and unpredictible. IWIMS is sufficient, but still has some areas that need updating.
387. This (ACES)is the only database available. The old Wang system now absolete was more user friendly. The ACES-HM/FMO release in June 2002 is projected to improve the user friendly capabilities quite a bit.
388. THIS COULD BE IMPROVED I THINK
389. This is my first time using a database like this

390. This is my first time using any database system in CE
391. This is the first such database I have used.
392. This is the only one database I can use.
393. This is the only one I have used.
394. This question is confusing.I do not like the system we are using. There are to many outages. The system should be a stand along type and you should have the ability to down load information from portable computers directly into the system
395. This question really does not make sense. I think you are asking if IWIMS (the database I use most frequently) is the best it could possible be. NO, this database was extinct before the dinosaurs. It is anything but user friendly, and there are definitely better packages that could be utilized. It seems that the federal government has decided to use a bunch of half developed programs that would never ever be able to make it in the commercial market.
396. This system is very good for my job, and the information that I need on a daily basis
397. This system is very good for my job, and the information that I need on a daily basis
398. To a point. There are some concerns with getting kicked out of the web based system; however, it is somewhat easier to follow than IWIMS.
399. To date this is the only datebase system that I have used. this system satisfies most of my needs.
400. To date, yes
401. To long to make entries, and very slow for any actions.
402. Too many bugs in ACES, too many steps for everything housing needs, many more steps to
403. Too slow and not controled locally. Which means for problems you must call.
404. Too slow and too many web connectivity glitches with ACES PM. WIMS/A106 was faster with less glitches.
405. Unfortunately this is the only database that I have used so I have nothing to compare it to. However, the problems encountered with ACES EM make me believe that there must be a more user friendly and efficient database.
406. unknown
407. Unknown
408. Update CWE is important item.
409. User Interface isn't usefull. Sometimes I lost my location where I am in database.
410. Using an in-house generated Access or Excell spreadsheet provides more flexibility, ease of use, and speed, but ACES generally has more records and is better from a MAJCOM perspective.
411. VUWIMS is the only database system available to me, for uses. However I've seen ACES, and it really doesn't look all that user friendly.
412. We don't have ACES here at the school house so can't give a good reading on it. IWIMS seems to do the job but has some limitations, we need more interface with other CE functions.

413. We had previously developed a local system using MS ACCESS to taiulor a system to the base user needs. Our system communicated nightly with WIMS and transferred data both ways. The best part of this system that we called CEPA was that it was very user oriented in that it was event driven and it gave you all the fields to be updated when an event took place. I.E. when the Design Engineer received a contract from LGC (Contracting), it provided all the fields and even told you which block on the contract contained the required information. CEPA allowed us to standardize data entries really well and the data was much easier to input therefore, more data was entered by the user with fewer blank fields. ACES was developed to primarily give HQUSAF what they need for MILCON projects. Very little effort went into making it a user friendly system. I have a copy of CEPA if you would like to look at it. I think you'll be pleased with it if you have ever done much data entry into a CE type system.

414. We have only had two. IWIMS AND ACES. Both sucked.

415. We send in our problems and never hear anything back. Don't even know if they are

416. When the old WIMS system was created, it was a direct mirror of BEAMS. This was a mistake due to many of the areas or fields being out dated and not needed. When WANG went away some changes were made to the current IWIMS, but it still greatly reflects BEAMS. Many many areas are not even used or needed, thus taking up space and slowing down servers. The same mistake should not be made when converting IWIMS to ACES. I am a 3E6X1 and have seen each of these conversions. AFSC experts should be brought in to give their insight into what areas should and should not be maintained.

417. wimms,(faster)

418. Wims did have an easier program because it auto filled housing applicant data from one entry. In Aces you must enter the same data in several entries catagories and Wims has auto fill.

419. wims is the best because ACES takes way too long

420. WIMS PROVIDED THE 1326 REPORT MUCH BETTER AND FASTER

421. Wims was a better system, because of the speed of the data retrieval. Aces does allow us to print many forms but with waiting for the system to work, I could type the form faster myself.

422. WIMS was best because we had rapid update capability since the server was located in the squadron. The centralized database used by ACES makes is painfully slow to access and update data.

423. WIMS was better than ACES. It is difficult to retrieve reports, the reports are not correct, therefore it is useless to waste our time entering data.

424. WIMS was fine when we tracked projects in it. Now we have CEO using WIMS to track Work Orders and CEC using ACES to track projects. Causes alot of duplication of effort and holes in data.

425. WIMS was much easier to use. It was easier to find the info that I needed in WIM. ACES has no history file, you have to go through 6 different screens to get info and it throws you out of the system after as little as 15 minutes. Often

I am busy with customers or phone calls this long. With Wims, I had a history file, could stay in the system as long as I wanted and could find the info that I needed in just one or two screens.

426. WIMS/PCMS was better in that less problems occurred regarding access for updates and reports were simpler to write.
427. with IWIMS you could. Hitting the % key seems to be one added step that should be
428. With IWIMs, several actions could be accomplished on the same screen without creating a voucher(journal in ACES)for each action as it does within ACES. ACES journals create too much paper.
429. Work order database is not in ACES yet.
430. Wouldn't say it was the best, I don't like that you have to leave a program to update another, (if making a material issue and a dsw needs reopened, have to leave and start over once going to the w/o program) Can't work in numerous windows.
431. Yes
432. yes
433. Yes
434. yes
435. Yes
436. YES
437. Yes
438. yes
439. yes
440. Yes
441. Yes
442. yes
443. Yes
444. yes
445. Yes
446. Yes
447. yes
448. yes
449. yes
450. yes
451. YES
452. Yes
453. Yes
454. YES
455. Yes
456. yes
457. Yes
458. Yes
459. Yes
460. Yes

461. YES
462. yes
463. yes
464. yes
465. Yes
466. Yes
467. Yes
468. Yes
469. yes
470. yes
471. Yes
472. yes
473. YES
474. Yes
475. Yes
476. yes
477. yes
478. yes
479. Yes
480. yes
481. Yes
482. yes
483. yes
484. yes
485. Yes
486. Yes
487. YES
488. YES
489. yes
490. yes
491. yes
492. YES
493. Yes
494. yes
495. yes
496. Yes
497. yes
498. Yes
499. yes
500. yes
501. Yes
502. yes
503. yes
504. yes
505. Yes

506. Yes - however always room for improvements
507. yes but very slow
508. Yes for what it does in tracking project administrative status. No system available to track physical construction and condition status.
509. Yes it is the best system that I have come across
510. yes it is the best to date
511. Yes it is the best to date, which isn't saying much.
512. Yes!
513. Yes!
514. Yes, ACES, for the wealth of information but it comes at the cost of a much slower system.
515. Yes, Best to date
516. Yes, Best to date
517. Yes, best to date.
518. Yes, but could use a lot of improvement. In addition, the old maxim of junk in - junk out still holds true. The accurate and timely input of data is not being enforced. Hear from the bases that it is a manpower issue because of the time involved.
519. Yes, but mine runs so slow that it takes forever to view or input information.
520. Yes, but still very unwieldy. Also, the communication between IWIMS and ACES is almost non-existent.
521. YEs, especially now that ACES is available on the web. Its poor planning that the IWIMS part of the module which tracks all of our work oreders is not in ACES yet.
522. Yes, I do believe it is the best to date.
523. Yes, I like IWIMS. It's very easy to use and to correct mistakes versus SBSS. (supply data base)
524. Yes, it is a much needed improvement over the A-106 system used previously.
525. Yes, it is as complete as the old IWIMS and even offers more.
526. Yes, it is better than IWIMS was. However my emploees have a hard time inputting information when it is running slow.
527. Yes, it is good. It is simple and doesn't force me to capture a lot of unnecessary information that I do not use or need.
528. Yes, it is the best to date.
529. Yes, it is the only one used for managing work orders.
530. Yes, it's easy to manipulate data in the system with other tools, e.g., Excel and Word.
531. Yes, mostly because it is so wide ranging in it's accumulation of information. One 'section' for planning, one for material, etc. It is not easy learn 'cold', but, once instruction is provided, it's quite usable. It could use a better help menu and tutorial program. Fairly stable, difficult if not impossible to lock up on the user end. Print commands could be more flexible. It is difficult to make a program so all-encompassing, still work as quickly as this does, and be flexible. It works.
532. Yes, much easier to use than previous IWIMS system

533. Yes, once I got used to ACES it is a lot more user friendly than IWIMS was.
534. yes, regarding information I need
535. Yes, the ACES-PM database (Engineering Module) is the best to date. It has a lot of features, and is not as "clunky" as IWIMS.
536. YES, with improvement as needs and requirements occur.
537. Yes,It is the best to date, but it can be improved.
538. Yes,It is the best to date, but it can be improved.
539. Yes.
540. Yes.
541. Yes.
542. Yes.
543. Yes.
544. Yes.
545. yes.
546. Yes.
547. Yes...ACES is the best we have now. But it still needs MAJOR improvements (e.g. speed, more windows oriented).
548. Your question is not well written. I am not sure what you are asking.

Question 18 Comments

18. For your current database system (as selected in question 16), what data is collected but not used?

549. #18 prime vendor tends to disregard ENTIRE CONTENTS of noun description; leading to
550. ?
551. ?
552. ????
553. Aces
554. aces data is okay but extremely difficult to use
555. ACES requires a lot of input, i.e. scheduled appointments/inspectors. Why would that information be required? Afterall, the history of each inspection is recorded on AF Form 227 which is permanantly filed in each facility folder. I think it would just as easy to look in the folder versus running a report.
556. ACES, I did not have training on this system yet.
557. address and installations of house. A way to express the address is different with American address. Installations are also different. There are some more other differeces.
558. Adequacy, #Bdrm and Rank Designator on MFH records. Vacant area, Rent Rec'd and Rent Paid on all records.
559. Again, without training on the entire database, I wouldn't know.
560. ALL COLLECTED DATA ARE BEING USED
561. All collected data is used and very helpful as required information may be needed for a verity of questions.

562. All data are eventually used. The data used the least usually is needed for special tasks involving statistics gathered annually, semiannually or monthly.
563. All data collected is used for reports.
564. All data collected is used.
565. All data collected is used.
566. All data collected is used. We do not use most all of the WIMS-ES modules (ie Tanks, etc..) and right now we at AETC are only using ACES for funding with plans to develope it with an EMIS module for tracking haz mats and waste.
567. All data could be used but not on an everyday bases, some of the collection is only used when trying to correct a problem.
568. All data currently being used but not by all the same people.
569. All data entered in the APIMS system is at some time used and if no longer used it maintains archived information.
570. All data I extract is used.
571. All data is being used.
572. All Data is used
573. All data is used
574. all data is used at one time or another
575. All data is used.
576. All data is used.
577. All data is used.
578. All is required for A-106.
579. all is used
580. all is used
581. All is used but not by everyone. Some people use portions that others don't use.
582. All is used.
583. All kinds of stuff, like labor hours
584. All of it is used
585. All of it is used.
586. All of these problems have been elevated to Gunter and hope a fix is in the works.
587. All the data appears to be usefull to someone at some level
588. All the data has merit.
589. ALL THE DATA IS COLLECTED IS USED IN SOME MANNER IF NOT HIDDEN, I.E. DISCOVER REPORTS. SOME DATA IS HIDDEN AND CAN ONLY BE RETRIEVED BY LIMITED CANNED REPORTS. DISCOVER IS PROBABLY THE MAIN REASON I WORK IN ACES BECAUSE I CAN MANIPULATE THE DATA THEY LET ME HAVE ACCESS TO AND WRITE MY OWN REPORTS (THE ABILITY TO USE OTHER MODULES DATA (PM-HSG-FIRE ETC.) WOULD ALSO BE HELPFUL).
590. All the data is used, some more that others.

591. All the data you can dream of is captured in IWIMS--the problem is IWIMS has very limited capabilities when you want to retrieve this data. Again, let our systems folks update IWIMS and lets press on.
592. All the informatin is used in some aspect of the program
593. All the information is similar to the old IWIMS project data collection and is all used one way or another. Some info is used more frequently than others.
594. All the information is useful at a time or another, but it is not necessarily something you interact with everyday or use that frequently.
595. All the various areas of housing.
596. All used.
597. Almost all.
598. alot of the items that are listed are a one time use and shouldt be there at all several of the items that are needed but not on a month to month basis are either deleted or coded to be deleted.
599. Although I only use a small part of the data (approx. 20%), it could be that the whole data is used.
600. approx. 50% of data on the FIM,Suppl. Info, and Envir.
601. As Chief of Ops I'd have to defer that question to my customer support staff that actually use the system on a daily basis.
602. As the MILCON Program manager I am not interested in O&M projects or Environmental projects and their associated fields
603. As the MILCON Program manager I am not interested in O&M projects or Environmental projects and their associated fields
604. Associated standards and requirements to the intended standards and requirements.
605. Base Civil Engineer
606. bid openings
607. BIRTHDATES, LOCAL ADDRESS, ESTIMATED DARTURE DATE, AND A WHOLE LOT MORE
608. bldg managers names not updated
609. Building systems, Current Mission/New Mission %, MAJCOM supported FY, MAJCOM Pri,
610. bus route, covered patio, carpted, dining area, dining room, deck, drapes/blindes,
611. Can't think of any right now. I am sure if I was given a list I could choose from that.
612. Can't think of anything at this time.
613. CEMAS
614. Codes are not used by the worker bees. Example, EEIC, PEC etc.
615. Command or MAJCOM priority and WING priority should be used for FACIL BD priority.
616. construction.
617. Cost Center Codes. The data is input and collected but manpower has inportant use for it.
618. Couldn't tell you, I don't you it that frequently.

619. Data collected is only useful if it is easily retrieved and current. Aces is not user friendly.
620. Data is not collected for my use, but HQ AFMC. Seems logical to them, apparently, but not to those of us who must keep it updated. Has a lot of stuff that we could use for our own tracking, but not easily.
621. DATA SUCH AS PRE-AWARD DATA IS NOT UTILIZED
622. Date of bitrh is collected is not used. It could be used to determine who is of drinking age.
623. Dates of project milestones already completed
624. days waiting mat etc
625. Dependants SSAN
626. Dependent social security number. Some field is not necessary in my task.
627. depending on what my boss asks for, all of it could be used
628. Design and construction date information. It often not accurate anyway.
629. DO NOT KNOW BECAUSE I ONLY LOOK AT SCREENS AND DATA THAT I NEED, AND AM NOT FAMILIAR ENOUGH WITH WHAT OTHERS NEED OR DON'T NEED.
630. Do not use the system often enough to answer this question.
631. Dont know
632. Don't know
633. don't know
634. Don't know because it's not functional yet. Don't yet know how accessable the data is through the Discoverer tools.
635. Don't know.
636. Don't know; I don't use any of the data.
637. dont, know
638. Due to the slow transition from IWIMS/WIMS to ACES and the lack of user training, after five years of working with IWIMS/WIMS--I must admit that can not provide a valid answer to this question.
639. DUERS drop down should reflect housing as a separate code. Duplication within F and M (Mobility) codes. Maintenance zip codes show as nearest town. Is that correct?
640. Engineering Projects because ACES doesn't talk to IWIMS.
641. EPS nouns, building managers and phone numbers, DIN, travel zone, and shop zone.
642. ETS labor, Task and Phases, W/O Tracking
643. Even if the Data is collected, if the data isn't easily retrivable, easy to manage, easy to sort, or accurate it is worthless!
644. Everything collected is used, especially by me and the Crew.
645. Example would be marriage date, but there are many things that are not kept up to date
646. FINANCIAL because CE budget is still using IWIMS and both don't alway interface.
647. fireplace, den/family room, fenced yard, garage door opener, near schools, hot tub,

648. For now I don't use the EA data.
649. For SABER many of the fields regarding design status does not apply
650. Funding details
651. General Remarks
652. Generally speaking most data reegarding personnel managing projects,
653. Hard to answer. ACES collects some data that we at base level do not use but they need at HQ or Air Staff.
654. Heres one example: A work order description is entered in a field; however, the printout shows about three words of that description. This ridiculous system creates confusion when running reports. Also, there some screen fields which are NEVER used--get rid of them.
655. historical
656. History of occupants becaus we cannot access it, occupancy report because we cannot access it.
657. HOUSES ASSIGNED AND TERMINATED. DOES NOT TOTAL ADMIN AND MAINTENANCE. AN EXCELL SPREADSHEET WILL TOTAL THESE.
658. Housing type is one. It is a mandatory field but has the wrong info for our base. Yet I must put something in that field as it a "required field".
659. How old is the housing unit
660. I am not aware of any
661. I am not sure on that
662. i beleive all the data is used at one point or another
663. I believe all the data collected is used.
664. I believe all the data is used, but not all by me. Some is relevant to the base only.
665. I cannot say what is not used as a lot of the data entered might be for other offices to use. I cannot speak for all the other functional areas, such as construction management, design and funding.
666. I can't think of any that couldn't be useful in one way or antoher
667. I do not know exactly what some of the data I submit is used for.
668. I do not know.
669. I do not know.
670. I do not see extraneous data in ACES/PM.
671. I do not use all available data, just name, address, unit, date arrived, ssan
672. I don't know
673. I DON'T KNOW
674. I don't know
675. I don't know
676. I don't know.
677. I don't know. The information I need is there. I don't know about the other data.
678. I don't think that all the data collected collectively is used to the best of its ability.

679. I don't use a lot of the date fields or info on mods. All I need to know is current cost, current status, current comments, and a few others.

680. I don't use all information -- for example, I may not need to know design completion dates, project inspectors, etc. That doesn't mean that someone else doesn't. However, this data is often collected, manipulated, and disseminated through another medium such as Excel. When data entered is incomplete for a large percentage of projects, then we can't use the data (too many holes).

681. I don't use alot of the design data in my job.

682. I don't use anything but job order and material aquistion stuff

683. I don't use most of the fields in the ACES system.

684. I don't use the data, I just input

685. I feel most is used

686. I feel that additonal managment tools could be developed using the daily employee time. Quick summaries of productivity rates involving indirect hours and direct. Snapshots of the workforce.

687. I feel we use all the data we collect.

688. I have a limited program for missile fields that I am attempting to run from ACES so much of the typical data is not used.

689. I have limited knowledge of what is used or not used for my funtion of IWIMS/Wims.

690. I have not worked with a lot of the sub files

691. I haven't been through the entire process yet so I haven't found anything that hasn't been used by me or someone else

692. I haven't been using this system long enough to correctly answer this question.

693. I know that I don't use all of the data, but I imagine that SOMEONE wants to look at it all. Nothing strikes me as being a totally worthless input.

694. I only assume their is data collected but not used, not sure

695. I only collect required date, so I use all data collected.

696. I only collect what is required to fill in required blanks

697. I only review the programmed amount, FY, and current status fields.

698. I only use certain data, but others may need what I don't need

699. I personally don't use all the data, but other offices probably do. I'm most interested in the project information.

700. I personnal do not use 90% of the data as a HQ Housing Programmer Manager, but I feel others use most of the data such as POC, FIM, Design Status, etc.

701. I think all data as of right know is used by someone

702. I think all data fields look useful, some more than others and to different CE parts.

703. I think all the data collected is probably used by someone, but I only use a small portion.

704. I think most the data is used.

705. I think that all the data collected is used by someone.

706. I try and cllect only the data I need

707. I typically specify only the information I need from the reports so there isn't any wasted data.
708. I use all the information and it constantly makes the job better for me when I am trying to assist with answering customer questions
709. I use it for ifomation mostly
710. I use most of the data a various times.
711. I use the data, but not often enough to warrant the hours of input. I am out in the field doing inspections 75% of the time.
712. I use the system for doing labor, job orders, planning, and ordering material. As far as the using it for anything else I don't use it because I have not be trained to do so.
713. I use very little of it (usually just costs, project descriptions, et...) so the majority of it is not used by me
714. I used almost authorized IWIMS database
715. I utilize the "Facility Investment Metric" and "Supplemental" tab information the least.
716. I'm in the environmental flight and I use almost none of the data collected for reasons other than environmental issues.
717. I'M NOT SURE THE OTHER DATABASE SYSTEM NEED OR NOT FOR MATERIAL CONTROL
718. I'm not sure.
719. I'm sure most of the data is sued by someone, just not by myself or the folks under me.
720. In the ACES database, you can input data on the personnel working projects. Though it may be helpful I have never used it.
721. In the Journal view, we don't use the Glac info, its only for Acctg and Finance. We input the information, but don't use the info.
722. In the labor portion, the positon number, dependent care program, and state of residence aren't used, but they're required entries
723. incorrect material being supplied.
724. Inexperienced people load inaccurate or incorrect data to describe a particular item. Also, one person may describe a certain item in a different way than someone else who may be looking for the same item, making it difficult to find this item. Sometimes not all or enough data is used to describe a particular item, making it difficult to decide weather or not the item in question is in fact the correct one. Different people use different adjectives to describe the same thing, making it difficult to locate items. Also, the same item may be added using different adjectives by different people, creating unnecessary redundancy.
725. Info on construction managers
726. Input of data needs to be enforced. To date, there is no ILE policy requiring ACES usage. Only adage stands firm "Garbage in, Garbage out"
727. Inspection Schedules.

728. Intermediate milestone dates; remarks; details of additives, change orders and modifications; breakout of CWE; contractor name; project managers information; designer/AE Firm name; ,

729. It all can be of use.

730. It automatically prints out the job orders. This wastes paper because I work off my job order report so I don't use the individual job orders. Production control said they cannot make the program not print the individual job orders.

731. It depends on the project. At one project or another, most of the information is used.

732. It depends who needs that information and the purpose, but to my knowledge, everybody in CE uses the data.

733. It is not so much that information is not used, as the option to provide additional data (for work orders, especially) is not used. Further descriptions aren't used, special requirements are not indicated, etc.

734. It's had to say, working in Operation Management. Just about all the data collected is use at one time or another.

735. It's hard to tell with IWIMS. I don't trust the data for any critical requirements.

736. It's not so much data is input and not used, its that the various tabs include fields that are of no use to Environmental. This just clutters up the whole process. Why can't a screen be developed for the foreground that ONLY has the fields we need and then let them be put into the various tabs in the background for use by others.

737. Its really more of a question of do I understand what all the data means

738. iwims and acespm do not interface properly

739. IWIMS generates a lot of wasted paper for Government Credit Card purchases that do not need to be maintained by the individual buyers.

740. J/O,W/O reports, RWP reports

741. jacuzzi, patio, porch, sauna, smokedetector, swimming pool, tennis court, utility room,

742. Journal summary by facility. We need to be able pull a report that will identify only real property transactions by facilities with the description/remarks. We use to have that under IWIMS, Voucher Transactions Summary by Facility. The current report under ACES-RP by facility lists all journal transaction, i.e. CIP, Depreciation, and other financial management transactions.

743. Just about everything. The data is important, but easier to track exactly what I want with other software

744. labor

745. Labor section

746. Lets put it this way, I use about 35 fields and the 1391. It is obvious the database was not designed for use by base level people.

747. many blocks in the members application are not needed.

748. Many of the details used more so by the Engineers, Programmers, and Construction Managers.

749. Milestone dates, contractor names and contact info

750. Milestone information

751. Milestones
752. milestones, design schedules
753. Miscellaneous information is collected. The information is not used for my purposes. But it is still pertinant to contract management.
754. most all of it.
755. MOST DATA IS COLLECTED AT THE MAJCOM LEVEL AND NOT AT THE BASE LEVEL. THE USE OF DISCOVER WOULD MAKE REPORT WRITING EASIER IF WAS MORE USER FRIENDLY. HAVING PRE MADE REPORTS WOULD HELP CONSIDERABLY.
756. Most if not all data collected is used in reports at one point or another.
757. Most importantly, dates of work completion are not tracked. Buildings often get new carpet, new paint, etc. more often than they should. Our lack of five-year plans is also a factor in this problem
758. Most is used at one point or another
759. most of it is used
760. Most of it...the information is supposed to be collected and utilized by the MAJCOMs and the end user, AFCESA (CEOX). The MAJCOMs and AFCESA are not utilizing the data base properly. They are constantly calling up the individual units and asking for information or for us to compile data that has already been put into the data base and submitted to them and AFCESA. i.e. total man hours, man hours for different types of emergency responses, what kind of responses and how many we are going on, especially in the wake of 9/11 we have been getting numerous questions about how we are effected (do to heightened security posture). ALL of this information and much more are seconds away, at their fingertips even. Instead they choose to reproduce work effort and increase our man hours by tasking us to generate this information. We only have the in-put end of the computer system, so when they call us we can not utilize the database they have access to. We have to go through all our logs, reports, etc. (involving hours or days and numerous personnel) to find and compile this information that they (one person) could retrieve in mere minutes.
761. Most of the data collected is used some way or another.
762. Most of the data collected, is used at one time or another. Some is used much more frequently.
763. Most of the data in the database system is used to provide metrics and project status to upper level management.
764. Most of the data IS used, at some level. I fully understand that all the data is not used at the base level, just as all of the data is not necessary at the MAJCOM or AF level.
765. most of the reports
766. Much of the specific project data is not used, and in many cases is never updated.
767. My data is almost 6 months outdated. I use none of it. I have been working for four months trying to get it to work appropriately

768. My database is collected for Exterior maintenance IDIQ, and ACES has no line items for it.
769. My projects are never funded so the data entered is a rather futile exercise.
770. N/A
771. N/A
772. N/A
773. N/A
774. n/a
775. N/A
776. N/A
777. N/A
778. n/a
779. N/A
780. N/A
781. N/A
782. n/a
783. n/a
784. n/a
785. N/A
786. N/A
787. n/a
788. N/A
789. N/A
790. N/A
791. N/A
792. N/A
793. N/A
794. N/A
795. n/a
796. n/a
797. n/a
798. n/a
799. N/A
800. N/A
801. N/A
802. N/A
803. n/a
804. N/A
805. N/A
806. N/A
807. N/A (for me)
808. n/a can't think of anything at this time
809. NA
810. na
811. NA

812. na
813. Names of people on the project, justification for both FIM and the project is redundant, wing vs installation priority-one or the other, air conditioning information in the 1391, not sure why Blk 12 is still used on the 1391-it's not used at the programming level here.
814. Naturally, the data at the MAJCOM and Air Staff level is not used by folks like me at the base level.
815. No comment
816. No comment
817. No comment.
818. No comment.
819. No current EOD applications in ACES
820. No data collected...system not available.
821. no opinion
822. No opinion.
823. None
824. NONE
825. None
826. None
827. none
828. None
829. None
830. none
831. None
832. none
833. None
834. none
835. NONE
836. none
837. NONE
838. none
839. none
840. None
841. None
842. none
843. none
844. None
845. None
846. None
847. None
848. none
849. NONE
850. none
851. None
852. None

853. NONE
854. none
855. NONE
856. none
857. None
858. none
859. None
860. NONE
861. none
862. NONE
863. none
864. none
865. NONE
866. None all are used
867. None that I am aware of
868. None that I can think of
869. None that I can think of
870. None that I can think of.
871. None that I can think of.
872. None that I know of
873. none that I know of.
874. None that I know of.
875. None that I know of.
876. none, all data is used.
877. None.
878. None.
879. None...N/A
880. non-sorts training
881. Not much
882. NOT MUCH REALLY
883. Not sure
884. not sure
885. Not sure
886. Not Sure
887. Not sure which is or is not. I don't run the master reports. But when i need info I am able to get it
888. Not sure.
889. Not sure.
890. Not sure. I don't collect the data. The data I need are available.
891. Nothing I can specifically remember.
892. Number of keys, damage done to the home, # of occupants, # of pets, damage to yard, previous investations, foundation and slab damage, roof work/replacement, smokers/non-smokers...etc.

893. Number of keys, damage done to the home, # of occupants, # of pets, damage to yard, previous investations, foundation and slab damage, roof work/replacement, smokers/non-smokers...etc.
894. Numerous fields. Sorry I'm not more specific. Need to eliminate data duplication with non-Civil Engineer databases. We should link to those databases for that data.
895. Numerous PM fields which do not directly apply to EQ project management
896. Old crap from the A106 transfer
897. old parts older work orders
898. product information
899. product information
900. Programming.
901. Project management tracking
902. Project management.
903. Project Unique is not used
904. Projected Move and anything that is projected
905. Projected Move and anything that is projected
906. Quality Inspections
907. reasons for project modifications are too generic and don't match the COE and NAVFAC so they become useless when used to analyze reasons for mods
908. reports and reconcilement
909. Reports on w/o, DSW's, RWP. For example, the data for emergency DSW completion is dependent on the date the information was entered. This can greatly skew your data if you don't have enough time to input the data.
910. rwp compliance data is computed but rarely does ayone care to look at it, and if there is a problem it is normally ignored--too many other pressing issues
911. RWP program--very unwieldy and user unfriendly.
912. Should keep all data because different users need different data.
913. Since I don't enter data, I'm not sure what they enter that seems to fall in a black hole, but I know it happens daily.
914. So far I have found no data that is collected and not used, it is all very helpful information.
915. Some data/ sections are not needed to perform my job
916. Some of the construction item are obsolete
917. Some of the Daily/Monthly listings are printed but not utilized at this base. For example; Quarterly Vendor Performance Report, List of Items Recommended for Deletion from Store Stock
918. Some of the data is useful only to programmers and of little interest to senior management. Despite their lack of interest, the data is useful in providing what they think they want. Project justifications, for instance, lets everyone know what a project is expected to provide and is an essential tool in establishing priorities. Unfortunately, justifications usually reqire several lines of information and a fairly wide column width, making a spreadsheet report somewhat more difficlut to read and requiring more pages.

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926. Some of the data is useful only to the programmers and of not much interest to higher management. Despite their lack of interest, the data is very useful in providing the information they recognize they need. Probably one of the most useful fields is that in Justification. Unfortunately, justification typically uses much wider columns and several lines, creating smaller print and more pages. Though extremely useful, that field is not made available to decision makers.

927. Some of the information about size, location, construction, etc. of the building. Although this information is not a required field.

928. Some of the inspection findings are never used to create projects

929. Some of the milestones/statuses don't reflect SABER work.

930. Some programs still in the IWIMS programs are outdated and no longer used.

931. System is adequate but operates too slowly.

932. THE AMOUNT OF PROBLEMS FOR THE SAME THING IN BUILDINGS AND HOUSES

933. The amount of records keeping associated with and related to the design and construction management milestones is excessive for quick contracting methods such as SABER and IDC. Would be better to simplify the buisness practice driven field relationships for those types of execution.

934. The current project status were not updated.

935. The data collected is not used by me, but by others-

936. The data I collect is used by the assignment termination folks.

937. The data is used, it just seems harder to enter - too many screens

938. The data should be used if the reports work properly.

939. The database I use the most is Material Requisition and work order data

940. The database structure/forms contain numerous fields that are not populated. We don't technically collect the data because we choose to not populate the field.

941. The database was set up with outdated projects pulled from our old system. We've been spending a lot of time weeding out old projects and information.

942. THe financial portion of construction projects is not used by the financial personnel, and is not adequately maintained by the non-financial folks.

943. The funding screens and sources seem redundant.

944. The information that i load into the database system, is always used.

945. The only data I use is financial info and the project description/justification. For example, I don't use the data on the current status of the projects.

946. The only data that is collected and not used is pre-defined or written discoverer reports that we are still attempting to learn how to pull up.

947. The personnel system is required for labor use. However, no one wants to keep it updated. Consequently only those inputting labor are the ones loaded. The personnel system would be a great use for Readiness if they would use it and could count on it being updated as required.

948. The pertinent information for the project numbers. i.e. KNMD
949. The specific carreer field data; such as Refrigerant Management data, Paint data, Entomology data etc... This also includes Administration data, Maintenance data, and Environmental data.
950. The wrong or not updated data.
951. There are items that we do not use but may be important to others in the Air Force. I do not have a list of items we do not use.
952. There are many fields that I've never used or had any reason to go into. Other areas that require access that was not a problem in IWIMS now requires special rights.
953. There are several area for project status, such as status, local status, etc.. Once we update the one area the others should be updated too, but the current system is not. We have to update both area.
954. There are several fields that exist in MILCON projects that are never used by the base. I guess somebody at some level puts data in for their use.
955. THERE IS A LOT OF DATA FIELDS WE DO NOT USE SUCH AS DEP SSAN.
956. There is a lot of redundacy in IWIMS. Work order indicators, LUCs, and work class are just a few. These field are all needed but could easily be combined into one.
957. They all seem to be used. Until I can get more training and experience, I would not have an adequate answer.
958. Things like base priority as opposed to wing priority. Why track both if the wing priority is the only one that counts? And allowing differences due to the resident country (be it Germany, Italy, Britain and Turkey)
959. To much data on some products when you are seraching for only a particular item
960. To my knowledge, all of the data in ACES is used, just at different times for different reasons.
961. To seach the status of the projects for funding or managing, the interface is oldfastioned. Microsoft Word, Excel or such kind of GUI are easy to understand.
962. Too much to list.
963. Tracking work orders and finding up-to-date status. You can never rely on what's in the computer system - either the user, production control, or the supervisor has to call down to the shop or craftsman to find out the real status of work. The same thing is true for contract projects through engineering - the status is rarely used because it's not reliable.
964. Training, Suspenses, Additional Duties, and some fields within other modules that have outlived their usefulness due to changes the way we now do business.
965. unknown
966. Unknown
967. Unsure. The data I need for my job is available.
968. Usually the justification section portion.

969. utility shed, basement, other, refrigeraton, stove, dishwasher, garbage desposal,
970. Various
971. Very little data collected by my shop is not used. We collect specific data by location and all of it is used.
972. Very little data collected by my shop is not used. We collect specific data by location and all of it is used.
973. washer, dryer, all kinds of heat. If occupied or available. All types type of
974. We collect enormous amounts of data from ACES-PM for use in the Facilities Investment Metric (FIM) program and the Installation Readiness Report (IRR). However, the accuracy of the data in our database is very low because our installation-level users are reluctant to use ACES because it is so slow and cumbersome.
975. We currently create CSL's for items being purchased in the CEMAS section of IWIMS. We currently have no means of pulling up the csl's as related to the shop that created them so we are forced to maintain seperate list to track all csl's made for a particular shop. Without creating this seperate list we must always search for an item we may have ordered 4 months ago.
976. We do not use PEC for any useful purpose at Base Level.
977. We do not use the following areas in IWIMs on work orders: travel zone, design, deprec,c/ord, potential problem area, and work performed (optional).
978. We need to specify which MAJCOM often, but don't need that data per se...part of database technology..not a problem
979. We only enter needed data
980. We use what is collected.
981. Weekly schedules are basicly useless, seldom represents actual work in progress
982. While much is used infrequently, most is all used from time to time
983. WO cost
984. WO indicator, work class, , AF account code, etc.
985. Work Order #, specific info about project managers(?), and have a feeling, a couple more items
986. Work order close.
987. Work order info.
988. Work order number on projects.
989. Work orders in the past that have not been purged out of the system.
990. work request num
991. Working within production control all data that is collected is used

Question 19 Comments

19. For your current database system (as selected in question 16), what data could be used but is not collected?

992. #19 standardized required entry such as weight, size, related CSL such as covers, gasket
993. ?
994. ?
995. ???
996. ???
997. 1391 should be better incorperated in this database. So to print out 1391 from database in proper formant
998. a better way to work out part usage
999. A building cutodian number that is update, correctly, by ACES. ACES is only used to do the building manger listing.
1000. A history file of previous occupants.
1001. A more detailed project description would be helpful. Most of the time the information that is entered is lacking in details.
1002. a more percise wording description for the items entered. a lot of the items have several diffrent names and trying to rember what it was called at your last base or what some one else would call it is a lot like being a psychic. and i am not.
1003. A routing system which requires approval of CEV before a project is approved would be helpful
1004. ABG Documentation. ACES doesn't provide any flexibility to incorporate overseas anomalies...Korea, Germany, Japan, etc. It would be nice if there were modules to incorporate host nation engineering practices and milestones. They shouldn't be default part of the ACES programs bothering the state side bases, but they should be there if you need them. ACES has noway to distinguish between a project being finaled and financial closeout when it comes to direct contracts. When we finish a project, it's many months (maybe years) later that the financial closeout happens, but the project status has to stay as "CNS". It'd be nice to label the project complete somehow and show it's status as awaiting financial closeout..."FCO"?
1005. ACES
1006. ACES PM there is no field for customer account code this would make it easer to supply our customers with a list of thier projects.
1007. Additional adjective catogories (more than four) when loading a CSL. It's harder to identify similar items when you don't have the space to properly describe them.
1008. AF Form 332 information
1009. AGAIN WOULD REQUIRE INPUT FROM MAJCOM USER
1010. All data is collected, it's just that none of the canned reports are suitable for our purpose, therefore the system is no better than a filing cabinet!
1011. All data we need is collected
1012. All facility numbers for a given project.
1013. All I want is a reliable stand alone system that is taylored to the local area. I do not like the outages.
1014. All is use, just don't need it all at one time.

1015. All of the data in the database could be used if the collection system were designed to sort out data using specific data elements. To date this is not avaiable and much of the data cannot be collected for a report.

1016. alternate sources for purchasing material

1017. annual cost so i can make a budget.

1018. Area specific info, exchage rates, wing & HQ taxes, etc.

1019. as of today, there is enough data being collected.

1020. asset management data in a user friendly environment--infrasturcture systems equipment and resources with direct intuitive links for accessing and converting data (e.g., make, model, serial number, maintenance and repair history, preventative maintenance schedules, replacement costs, operating expenses, etc.) into information.

1021. AT/FP choice

1022. Automatic Data Processing Equipment info to help us manage the multi of PCs, servers, etc. that we manage.

1023. Bay Orderly Informaion

1024. beable to track a repeat writeup on a continuous problem. Example, how many times a roll up door breaks down in facility.

1025. Better discriptions of facility and systems defects could be inputted. The ability to do so is there it is just not being done by the inspectors.

1026. Can't think of any

1027. Can't think of any at the moment.

1028. CAN'T THINK OF ANY AT THE MOMENT.

1029. Can't think of any that impact my job.

1030. CEMAS, Work order

1031. Code and regulations that govern the way we do our job as civil engineers...is that possible?

1032. Comments, WO or project descriptions, costs, tracking status, work performed, equipment history

1033. Committed Amounts for Level 0 projects.

1034. Communication-Computer Support pricing data (MILCON funded)

1035. companies, persons involved (only a part of them collected); important remarks; actual cost estimate.

1036. Compliance Site number that each environmental project is addressing an issue at.

1037. comprehensiive work orders list in facility for eacch Fiscal year

1038. Consolidated waiting list -- community housing referral list

1039. Correct and Accurate data!

1040. Cost and task data are not collected and stored in a format that allows managers to make educated decisions on maintenance & repair activities

1041. Cost by building.

1042. Cost of jobs broken down into manhours and equipment/parts.

1043. Cost of X-line items.

1044. D3, Certificate of Compliance

1045. DATA APPEARS TO BE THERE. PROBLEM IS EXTRACTING IT. VERY TIME CONSUMING AND DIFFICULT.
1046. Data is just not imput into the system. Example would be the 1327 does not work properly.
1047. data on claims and funding information is not complete and neds to be added/addressed
1048. Data on contract claims
1049. Data on contract claims
1050. Database for buildings which have constant ongoing problems and not
1051. Date record was last updated and by which user either at Majcom or within the control orginization
1052. DDD sheets on 1391c.
1053. DESC program information
1054. different sources
1055. Dont know
1056. don't know
1057. don't know
1058. Don't know because it's not functional yet. Don't yet know how accessable the data is through the Discoverer tools.
1059. Don't know...the data I need is available.
1060. Don't know; I don't use any of the data.
1061. don'tknow
1062. DUERS housing information. Need PRV data.
1063. Each shop in CE has specific data that all the shops use. When developing a database you should get down to the shop level and see what they track (maintenance dates, items the shop has, hazmat, pmel. Some of these programs are in IWIMS but is seriously outdated. If it was updated and taught to the user I am sure they will use it.
1064. EEIC's of current working estimates and bids. Programmed amounts have multiple EEICs, but no other funding field does. Need place for currency exchange.
1065. EIAP information and reference data for bibliography of Environmental Assessments and Environmental Impact Statements assoiated with the various projects and where they could be found.
1066. e-mail address
1067. Engineering manhours spent on each project for programming, design and execution. Incorporating project funding documentation (AF fm 9) in ACES would be useful.
1068. Enough data is in there, searching and finding things are harder sometimes though due to the way it is set up.
1069. Estimated design milestones and current construction cost. I'm actually required to track these by AFI and have them in my database. I am in the process of adding these fields. The estimated design milestones is actually a field that I consider unnecessary, but I'm only adding it because the AFI says

to. All design milestones are tracked in my design schedule which is a different entity from my database.

1070. Evidently HQ AETC/CEV feels that the data collected by ACES for funds obligations is inadequate.

1071. Existing data requested is ok, again, useability of the program makes is more work than worth the effort of using this system.

1072. Expensing of TWCF funds

1073. Exterior IDIQ projects needs the actual quantities for miantenance such as paint area, repair portions for wall, roof, and so forth. This is very limited world comparing with the managing projects for funding.

1074. Facility Roof Replacement, Plant Replacement Values (PRV) data, GEO-BASE address information and present RP facility numbering commanders are wanting to renumber real property facilities to match GEO-BASE map address locations GEO-BASE will be at all commanders desktop access.

1075. fine what its for

1076. Fire truck Pump Tests and Testing database

1077. Fix the problem with the evaluation form, to have an option to randomly select work orders for Requester to complete

1078. Form 9 ABSS pruchase order numbers. SABER process steps which combine both Design and Construction processes

1079. From student input and from observation in the field we have an excellent management tool in the IWIMS System but is NOT being used and that happens to be The Engineered Performance Standards. It seems that only a few bases are using them and then on a very limited basis. They should be used to estimate all work and to check to see how well a shop is doing by coming close to the estimated hours and dollar amount. This can also show how much rework has been accomplished either due to poor planning or the shop Not reporting labor hours correctly.

1080. full description of work needed to be done!!! in detail

1081. FUND REQUEST DATA

1082. GeoBase Data could be added to an Geodata Base in Oracle.

1083. graduation date

1084. Group and Squadron of requester

1085. Hazardous Materials--lead/asbestos section

1086. Historical information

1087. Historical reports (previous occupants, maintanence, etc)

1088. Housing facility numbers ex. 3040A, 3040B. The letter is not used, so we have no method of tracking, in ACES, which particular unit the work is being done on.

1089. How many requests that are opened are related or duplicated?

1090. I am having trouble collecting data for history purposes.

1091. I am sure there is some data but can not think of anything specific at this time.

1092. I believe we collect all the data we need.

1093. I cannot think of any at this time.

1094. I cannot think of any other data which could be included to make this program better.
1095. I can't think of any at the moment.
1096. I can't think of any. We're tweaking ACES PM via some IPT that is somehow empowered to submit the software changes to AFCESA's POC via a comm work order.
1097. I don't know
1098. I don't know
1099. I DON'T KNOW
1100. I don't know
1101. I don't know of any data which could be but is not being collected.
1102. I don't know of any information that is not already included.
1103. I don't know of any information that is not already included.
1104. I don't know.
1105. I don't know.
1106. I HAVE ALL I NEED. CAN'T THINK OF ANY THAT NEEDS TO BE ADDED.
1107. I have no idea
1108. I haven't been using this system long enough to answer this question.
1109. I honestly can't think of anything.
1110. I honestly have not needed any information that was not collected.
1111. I think all the necessary data is collected.
1112. I THINK THEIR ARE A LOT OF WASTED FIELDS BUT SOME COVER WHAT WE NEED.
1113. I understand that the programmers are working on improvements and suggestions as problems are identified. We started using ACES CEH module before it was completed.
1114. I would say not enough data is entered but the question is who uses/need the data. Some of the fields not applicable for base level but might be need for other functions or higher level.
1115. If and when funding is sent to base level and the amount of funding that was sent would be very helpful.
1116. If pets are negotiable.
1117. I'm not aware of any.
1118. I'm not really sure, but with all the options about a GIS being tied into facility data (GeoBASE for one), it doesn't look like ACES should be the end-all product. If you were able to tie facility drawings, actual photographic base maps, and project/work order data into one CURRENT database, then it might start approaching a useful tool. That is, if people can easily use the program (that means decent training), you don't have to wait 10 minutes every time you hit a keystroke, and we had the manpower to keep the information current.
1119. I'm not sure
1120. Impac Purchase (receipt)

1121. Improvement are in process regarding information populated on AF 1326 (very important). I feel needed and required information is identified however a few links are missing. Understand Gunter is working these issues.

1122. Information from this Overseas location when they created the system would have helped tremendously. It seems like no one looked over how the housing system works here on the biggest(I think) overseas base. All kinds of "housing scenario's " exist on Okinawa that is not applicable stateside.

1123. Infrastructure codes

1124. Infrastructure subsystem codes, infrastructure subsystem priorities, and overall infrastructure priority. Apparently the base(s) queried on the conversion from IWIMS to ACES did not use or recognize the desirability of retaining that capability. At AECS implementation training, the instructors said that data could be entered into Project Unique fields. Only one project unique value at a time can be extracted in ACES inhibiting the usage of that project coding information.

1125. Infrastructure subsystems formerly available in IWIMS were eliminated in the conversion to ACES presumably because those base contacted did not use them. As a result, ACES Infrastructure entry permits only the single letter Building System designation. Supposedly, those values can be enterred into ACES through Project unique fields and unique values for those who want to use them. Unfortunately, ACES limitations apparently preclude reading more than one unique value. User identification to me appears to be the most useful unique value, but other very imiportant items are the infrastructure subsystems. the subsystem priority, and an integrated infrastructure pririty.

1126. Infrastructure subsystems formerly available in IWIMS were eliminated in the conversion to ACES presumably because those base contacted did not use them. As a result, ACES Infrastructure entry permits only the single letter Building System designation. Supposedly, those values can be enterred into ACES through Project unique fields and unique values for those who want to use them. Unfortunately, ACES limitations apparently preclude reading more than one unique value. User identification to me appears to be the most useful unique value, but other very imiportant items are the infrastructure subsystems. the subsystem priority, and an integrated infrastructure pririty.

1127. Infrastructure subsystems formerly available in IWIMS were eliminated in the conversion to ACES presumably because those base contacted did not use them. As a result, ACES Infrastructure entry permits only the single letter Building System designation. Supposedly, those values can be enterred into ACES through Project unique fields and unique values for those who want to use them. Unfortunately, ACES limitations apparently preclude reading more than one unique value. User identification to me appears to be the most useful unique value, but other very imiportant items are the infrastructure subsystems. the subsystem priority, and an integrated infrastructure pririty.

1128. Infrastructure subsystems formerly available in IWIMS were eliminated in the conversion to ACES presumably because those base contacted did not use them. As a result, ACES Infrastructure entry permits only the single letter

Building System designation. Supposedly, those values can be entered into ACES through Project unique fields and unique values for those who want to use them. Unfortunately, ACES limitations apparently preclude reading more than one unique value. User identification to me appears to be the most useful unique value, but other very imiportant items are the infrastructure subsystems. the subsystem priority, and an integrated infrastructure pririty.

1129. Infrastructure subsystems formerly available in IWIMS were eliminated in the conversion to ACES presumably because those base contacted did not use them. As a result, ACES Infrastructure entry permits only the single letter Building System designation. Supposedly, those values can be entered into ACES through Project unique fields and unique values for those who want to use them. Unfortunately, ACES limitations apparently preclude reading more than one unique value. User identification to me appears to be the most useful unique value, but other very imiportant items are the infrastructure subsystems. the subsystem priority, and an integrated infrastructure pririty.

1130. Infrastructure subsystems formerly available in IWIMS were eliminated in the conversion to ACES presumably because those base contacted did not use them. As a result, ACES Infrastructure entry permits only the single letter Building System designation. Supposedly, those values can be entered into ACES through Project unique fields and unique values for those who want to use them. Unfortunately, ACES limitations apparently preclude reading more than one unique value. User identification to me appears to be the most useful unique value, but other very imiportant items are the infrastructure subsystems. the subsystem priority, and an integrated infrastructure pririty.

1131. Infrastructure subsystems formerly available in IWIMS were eliminated in the conversion to ACES presumably because those base contacted did not use them. As a result, ACES Infrastructure entry permits only the single letter Building System designation. Supposedly, those values can be entered into ACES through Project unique fields and unique values for those who want to use them. Unfortunately, ACES limitations apparently preclude reading more than one unique value. User identification to me appears to be the most useful unique value, but other very imiportant items are the infrastructure subsystems. the subsystem priority, and an integrated infrastructure pririty.

1132. Infrastructure subsystems formerly available in IWIMS were eliminated in the conversion to ACES presumably because those base contacted did not use them. As a result, ACES Infrastructure entry permits only the single letter Building System designation. Supposedly, those values can be entered into ACES through Project unique fields and unique values for those who want to use them. Unfortunately, ACES limitations apparently preclude reading more than one unique value. User identification to me appears to be the most useful unique value, but other very imiportant items are the infrastructure subsystems. the subsystem priority, and an integrated infrastructure pririty.

1133. Infrastructure type data--there needs to be more fields specific to infrastructure.

1134. International currency converters, multiple design agents, expanded programming timelines.
1135. Inventory time for materials that come into CEMAS/IWIMS
1136. IRR C-Rating and category
1137. It meets my needs.
1138. It might be better if we had more options to search through. Sometimes I have to filter through many projects because the main screen does not give me the option to search for specifically the category I need.
1139. It needs to be modifiable for each base or unit. In Korea no one except SNCo's i authorized vehicles but a vehicle spot be nice. Bike space
1140. It needs to be simplified.
1141. its not what can be in the system it's keeping the quantity item correct and type of material correct
1142. its only as good as the updated information
1143. just showing open and closed work for past six months.
1144. Land acquisition or land use report.
1145. Links to work order numbers, facility numbers, facility managers.
1146. Local status codes and uniques are difficult to use - better system would allow more control over choice of local data to track
1147. Main problem is with Different areas using ACES and IWIMS data is not always shared pertaining with engineering branch and real property when interface does happen not all data is transferred properly
1148. MAJCOM priority...the database has no flexibility to easily enter MAJCOM priorities which would make my current job much easier
1149. materials listing for RWP
1150. Maybe Installation Readiness Report (IRR) ratings and Plant Replacement Value (PRV) figures.
1151. Medical information
1152. metadata or "data about data." Who entered what, when? Data is only fully trusted when we know details about it; who entered it and when did they enter it?
1153. Modifications
1154. Module needed to track physical data, such as roofing program data, hardware (keys & locks), etc. in order to monitor condition and status of existing facilities.
1155. More access in certain area. We are sometime limited to some access but I thing supervisor should have the access if trained properly.
1156. More comment space in Usage screen.
1157. More detailed construction status/progress data would be beneficial.
1158. more detailed cost estimates and maybe a place where you could insert CAD drawings to give people a better idea of what the project entails
1159. more detailed info on product (merchandise).
1160. More Fire Prevention data. All the forms that we use look terrible! More time should have been spent getting a nicer finished product.
1161. More in information about the technicians who are actually doing the work.

1162. More parameters listing the "EPS noun"--there is screen after screen of nouns to choose from; however, many common ones are not even listed. Some are just so specific that they are probably never used. Also when entering AF form 332 info for draft inputs, the screen cuts you off halfway through the description field. It doesn't allow the user to use all of the space which is very annoying.
1163. More user friendly reports that can be used for all types of data
1164. Most data can be collected using IWIMS as long as the information is entered into the system. Human error is the main reason data is lost or not collected at all. There are many different ways to collect the same information on IWIMS, thus the over kill.
1165. Most of what I use is collected, but it's very difficult to get to! The current system requires the user to write reports, from scratch, in MS Access. If you don't have significant Access experience, you're at a loss.
1166. N/A
1167. N/A
1168. N/A
1169. N/A
1170. n/a
1171. N/A
1172. N/A
1173. N/A
1174. n/a
1175. N/A
1176. N/A
1177. N/A
1178. N/A
1179. n/a
1180. n/a
1181. N/A
1182. N/A
1183. n/a
1184. N/A
1185. N/A
1186. N/A
1187. N/A
1188. N/A
1189. n/a
1190. n/a
1191. N/A
1192. N/A
1193. N/A
1194. n/a
1195. n/a
1196. N/A

1197. n/a
1198. n/a
1199. N/A
1200. N/A
1201. n/a
1202. n/a can't think of anything at this time
1203. NA
1204. na
1205. Name of POC (office or engineer), contractor's actual cost, contractor's name, and performance COMP. date.
1206. National Fire Incident Reporting System
1207. Need a summary block that shows the time line of project in, acted on, etc.
1208. Need a way to look up work order numbers in ACES, no way to input Deg-A which is used in ACC
1209. Need additional block user can define, such as "user" or "requseting ognization". Based on the recent update of AFI32-1032 which replaces "RPM" with "SRM", the funding source should be updated and sub funding source area should have more blocks user can definded or added. Then it's easier to track the records based on the different funding source within the same SRM.
1210. NEED MORE DETAILED WORK ORDER/PROJECT INFORMATION TO PROCESS REAL ESTATE TRANSACTIONS. SHOULD NOT HAVE TO LOG INTO OTHER ACES MODULES TO SEEK INFO RELATED TO FACILITY IMPROVEMENTS/REPAIRS/CONSTRUCTION.
1211. Need program to calculate how much money is being spent (parts and labor) on a particular building. (Separate programs for each) Need program for budget to calculate how much money was spent during the current and past fiscal years. (Parts and equipment) Need program to calculate how much money is being spent and how many of specific item is being ordered(used). Example: Spent $300,000 on Fire Alarm Panels Qty. 120 It will help find out reoccuring problems in certain areas. It will also help to cut down on Fraud, Waste and Abuse.
1212. needs to be more user friendly. potentially design for each individual to enter in own info into database from daily data gathering
1213. No comment
1214. No comment
1215. No comment.
1216. No current EOD applications in ACES
1217. No details of buildings over 6months
1218. No ideas come to mind at the moment.
1219. No more micro-micro management is needed.
1220. no opinion
1221. No opinion.
1222. No opinion.
1223. no opinon

1224. no reply
1225. No way to track a user of space in a building if they occupy less than 500 SF. We would like to track all users of our space regardless of the SF. I understand this is to eliminate tracking small space users but this should be optional with the Real Property Officer.
1226. None
1227. None
1228. none
1229. None
1230. none
1231. None
1232. NONE
1233. none
1234. none
1235. NONE
1236. None
1237. NONE
1238. none
1239. None
1240. none
1241. none
1242. NONE
1243. None
1244. None
1245. None
1246. None
1247. none
1248. NONE
1249. none
1250. none
1251. NONE
1252. None
1253. None
1254. none
1255. none
1256. None
1257. NONE
1258. none
1259. None for me
1260. None for me...
1261. None I can think of at this time
1262. None I can think of. There are places for all of the required data - the issue is whether it is used and accurate and quickly accessible.
1263. none it has enough now
1264. None that I am aware of

1265. NONE THAT I CAN THINK OF
1266. None that I can think of.
1267. None that I can think of.
1268. None that I know of yet
1269. None that I know of.
1270. None.
1271. NONE.
1272. None.
1273. None.
1274. None.
1275. None. The program is powerful and can with minimal creativity be applied to capture recycling and land disposal activities.
1276. Nope
1277. not all aces data is available for discoverer creates frustration
1278. Not all the standards and requirements are on the web. Would be very beneficial especially to the overseas people who have a hard time calling back to the states for information.
1279. Not quite to that level of understanding of the system. Still trying to use the capabilities it gives me.
1280. Not relevant. I will address this in general comments.
1281. Not sure
1282. Not Sure
1283. Not sure
1284. not sure
1285. Not sure
1286. NOT SURE
1287. not sure
1288. Not sure, are there fields for: committed and obligated amounts?
1289. Not sure.
1290. Not Sure.
1291. not use
1292. Nothing
1293. Nothing
1294. Nothing comes to mind. The MOST important fields to me are the design and construction comments, where one can really explain what is happening with a project.
1295. Nothing else needs to be collected in my opinion. Too many metrics to live by now-
1296. Nothing that I can think of right now.
1297. Nothing that I can think of.
1298. Only when the base doesn't fill out all the fields. The justification section and remarks in particular, also folks don't often fill out the scope of the work.
1299. or optional. This can be vital to organizations that transport material to TDY locations

1300. Our command askes for bid opening notices before money is released. Why? All that info could be pulled from ACES

1301. Our command uses an LGC control number, an indicator that contracting agrees that a project is RTA.

1302. Perhaps conversion of the entire 1391 programming process (all documents) to a database system, ie site plans, D3 sheets, cost estimates, Certificates of Compliance, NATO eligibility statements, etc.

1303. Pictures for CEMAS items.

1304. pictures or web pages for building and looking up CSL's for materials. plus instead of puting the three alfa numeric code put the name of people modifiing the acuasitions,etc.

1305. Please link up the work order system with ACES-PM.

1306. Please see response to question #17.

1307. PM does not feed back to IWIMS could use the project numbers when assigning work orders

1308. Predictive Maintenance

1309. Probably not so much a matter of which data, but the format it's in and some of the built-in defaults and quirky ways it operates.

1310. Program specific information.

1311. project comments

1312. Project data - location within base, square footage, extent of excavation, environmental and historic preservation sensitivities

1313. PROJECT DESIGN AND CONSTRUCTION INFO

1314. Project Tracking Location.

1315. purchase request numbers

1316. Quality indicator, warranty program,

1317. Readiness info.

1318. Real Property/PRV data

1319. Referral data for Privatized Housing

1320. Restrictions on adding data to MILCON project records is detremental. When data control is at higher headquarters, info is not updated.

1321. RP does not let you assign multiple facility managers for a building that has many different users and a manager from one area has no authority in another.

1322. RWP data is not collected in such a way as to allow you to run reports showing information often required by inspectors, auditors, managers, etc. and many of the costs are difficult to retrieve in reports without also using Excel spreadsheets.

1323. SABER related items, such as Negotiated Amount, Awaiting Funds, etc.

1324. Same

1325. Same as above

1326. Same as above.

1327. Same as Q #18

1328. Schedule growth is not stored. I also think that having cost and schedule growth collected at specific intervals during the life of the project would be helpful.

1329. See #18
1330. See above
1331. Sewer & septic tank block. Additional phone number slots (cell phone-home-office). When printing, should be able to print 3/4 bath only. All utilities paid.
1332. Shared applications between bases, so that if the individual departed housing here, the next base would not need to input the same information.
1333. Since I'm in overseas, most of the columns can't be used for our purposes.
1334. Some design/construction or contracting methods specific to the European or German theater are not available options in the current system
1335. Sorry, I cant help on this one.
1336. Special level identification and report within CEMAS program on IWIMS.
1337. Spill reporting
1338. Stuff that was programmed improperly due to system constraints and the system being brought online too soon, and people programming things before they were trained.
1339. surveys of facility conditions, especially LBP and Asbestos content. We do a lot of redundant work.
1340. System is adequate but operates too slowly.
1341. System organization must be installed.
1342. task order numbers
1343. That's hard to answer due to partial use of the system. Some sections use ACES, others IWIMS, so data is not readily available across systems.
1344. The 1391 funtion in ACES is nice except when it malfunctions in the Internet version, but many times different organizations (such as DESC) want a version they can look at and modify and there is no way to get the ACES version into some sort of word format.
1345. THe 1410/1411 purposes.
1346. The ability to attach drawing or pic files to have a better visual understanding of the item or subject inputed.
1347. The actual repairs performed is not always collected, but it would be useful in determining recurring problems.
1348. the AF has contracted out a lot of services. We have not been able to interface with contractors expenditures in O&M for any given facility. Summary data that provides total cost visability by facility of a breakdown by system of a facility.
1349. The construction management portion of ACES-PM is basically ignored by our Engineering Flight inspectors.
1350. The correct information for the item and the correct name for the item or a more common name used by the technician.
1351. The correct information for the item and the correct name for the item or a more common name used by the technician.
1352. The data base is thorough.
1353. The data I need are available.
1354. the data they currently ask for is pertinent, just not utilized by the end users properly.

1355. The database gives a date of last update to a record, but not what the specific change to the record was, sometimes it is helpful to know exactly what was changed on a work order record.

1356. The database is set up for traditional design contracting. I haven't figured out a way to track design/build contracts efficiently yet.

1357. The flight is not notified when someone has updated/changed, etc. data in the database. Only way we know of change, is to look at each project. Need a daily listing, preferrably by email, of changes to applicable bases projects.

1358. The infrastructure types do not have enough categories to make useful reports. Also, there are other categories to code projects, such as whether it is an Airfield Obstruction Reduction Initiative.

1359. The IWIMS system had a "Tracking Location" field that indicated who had current responsibility for a project. ACES does not include that field. A lot of data was lost and now we have to create a unique field to track this important data.

1360. The major downfall with the system is the lack of connectivity to the work order system.

1361. The most current SOWs.

1362. The pertinent information for the project numbers.

1363. The system is not user friendly and I have not had training on it. I would need a system that works shop specific and at my shop level.

1364. The true need for the data entered (projects entered). We need to fund some of these projects even if there is no "law" requiring such!

1365. The web version of ACES-PM does not allow a user to attach supplementary files such as sketches, notes, spreadsheets. This is a critical item for most users

1366. There is always room to improve a system and expand its capablities, the more options you have, or in this case data,the better the system

1367. There is no cost of the x-line items in the current database sys and lots of times we need that information but its no longer available. We could use more reports on Hsg units. How many bldgs and how many units and area amounts per category codes.

1368. There is plenty of useless data. Again you're asking the wrong question.

1369. There is probably a lot but let me give an example: The IWIMS system will tell me how many job orders have been opened, how many have been closed, how many have been closed on time, how many were closed late and how many are still open. The numbers are skewed however because if a job is closed then reopened, the reopening does not count but when it is reclosed it counts as another job closing. The system should either count the job being reopened or not count it when it is reclosed, or count how many jobs are reopened.

1370. There is so much info out there that we are still working to learn just what all is available. The slowness, frequently getting kicked out, and lack knowledge of discoverer and ACES-HM as a whole are our primary concerns. Need more training.

1371. There may be fields for the necessary data, but a lot of the fields are not always populated as they should be. This, of course, is not a fault of the database system.
1372. to many to mention.
1373. to many to mention.
1374. To produce the metrics we use to monitor our processes, sometimes we have to manipulate the raw data in other software (excel & access). Specifically, how many total days has the DSW/Work Order been tracked to a shop is one data point missing.
1375. Too numerous to list....
1376. Track the stages of the project more thoroughly using the miletsones. Maybe get notified somehow when I project reaches a phase that will need your input or review.
1377. Tracking manhours against a project which could be used in a number of different manners it would also easily identify reimbursible costs.
1378. Tracks all information I need, however it could use a better interface
1379. Trakcing obligations, committed and obligated amounts.
1380. transactions are input by ORG and craft but can not be retrived
1381. Typically it is human error not entering enough information in comment/description blocks
1382. Unaware of any
1383. Unaware of any particular information that I am unable to retrieve from the data system
1384. Unaware of any particular information that I am unable to retrieve from the data system
1385. Unclear about question... Most data is collected and used.
1386. Unit pricing for project items
1387. unknown
1388. Unknown
1389. Unknown. I only input data for others to use, ie command level.
1390. Vehicle and other management data
1391. Warranty Calls and descriptions
1392. warranty info is not tracked at all in this module...no area for post inspections etc...
1393. Warranty information is the single easiest thing to lose through personnel transition, but is an easy thing to input and keep updated - it doesn't change until the warranty expires. Operations flights spend untold hours trying to track down warranty info that could easily be kept in a database.
1394. Warranty information; infrastructure type
1395. Warranty program (Not used online fully if at all) ; facility surveys(done manually),
1396. Warranty, ie: roofs, facilities, equipment.
1397. Warranty/Guarantee, along with standby rosters.
1398. Warrany information. They have a place for it, but it is useless.

1399. Warrenty information on some long term systems like roofs needs to be collected an maintained.

1400. We could be collecting inventories of items, like tanks, Air Permit compliance points, etc.. Like the compliance site inventory done a few years back. This data could be used in ACES-EM, which is not immplemented in our command yet.

1401. We could use a method of attaching electronic images. We currently use our command directorate's web page to associate photos with work requirements.

1402. We need a base locater. Its has information related to our job.

1403. We need a history file. I often get forms to fill out for past occupants confirming their rental history but we no longer have that option.

1404. We need to have a field for the committed amounts and a general comments field for execution strategy.

1405. We would like to be able to do more with the base priority so projects could be flagged as funded

1406. When and who inputed the data.

1407. When materials are ordered via the IMPAC card, there's no link to the work order in IWIMS. Information on delivery dates must be looked up manually by someone else.

1408. when the interface occurs between the afore mentioned databases all work order info is not transfered

1409. Who specifically worked on jobs, not just the last charged labor. Also maybe be notified through the program when materials come into BOM.

1410. Who updated the database last-that we can track why a change was made if not evidently clear,

1411. WO data.

1412. Work order specifics. You cannot track a project down by WO number and you cannot look at what details a work order has.

1413. Work orders to go with the project numbers. Justifications, descriptions, etc. for each project.

1414. Work that is done on a facility, parts installed, RWP performed etc.

1415. You could include a counter

1416. Zipcode

General Comments

1417. AT/FP is a valid funding sub source under O&M RPM, but it won't come up in the menu on the prioritize page.

1418. Can't generate multiple primary facilities for 1391 w/o "tricking" the program. Must treat the top line as a summary line and force value to round down to zero.

1419. On the programming tab, local status disappears when you save. Fix: enter a few times and keep hitting save and it eventually saves.

1420. Prioritize projects has something goofy going on. Always gives me an error and kicks me out.

1421. Refresh button doesn't work
1422. ACES Bugs:
1423. Are we the only base having problems? I'd be interested in a report of what you collect. I can give you more details on anything I've written. I'd also be interested in a report of what you collect.
1424. Conversion of client software to web based portal is premature. It's not fully functional yet. One example: supporting documents just disappeared from the menu. We have data stored in this slot and now we can't even access it. And with all the firewalls, when are we actually going to be able to access the system?
1425. Conversion to ACES left database a mess. Among many problems, we have nearly 1000 projects in "BSE" or "PRG" status and the base is locked out. Hundreds of projects just disappeared (apparently all the ones that hadn't been submitted yet). Could someone, somewhere please convert some of these to history? History doesn't mean they disappear, they just move to inactive status.
1426. Discoverer is great...but it costs $800 per year per license. ACES is useless without a report writing tool and it appears that the bases are unwilling/unable to fund licenses for the squadron. Access/Excel aren't the answer. Access is too complex and Excel is limited in report writing capabilities. Why doesn't the AF license this product for the AF or at least negotiate a contract that allows us to put a single license on a server and multiple users (blocked out if someone else is using the software).
1427. Help menu in ACES might be helpful if the topics were populated...
1428. It's so slow (although getting better)...I can't afford to spend an hour (literally) just to enter a single project into the database.
1429. Overall: excel spreadsheet is much easier and faster. That's how we track our programs and projects...ACES is too much of a mess to rely on. Seems like a lot of duplication of effort.
1430. Who is our ACES POC and where can we get answers. Where do we report bugs? How do we resolve issues like: I can't find anyone on this base with the file maintenance role.
1431. Why are the programming choices on many pull down menus obsolete: EEIC, PE, Type work, etc?
1432. Why can't we update MILCON projects at the base level? Can't cancel when obsolete, can't update 1391s, can't even add comments after it's been submitted. MAJCOM usually isn't interested in doing our typing to keep the database updated. If we don't have a system we can fully use, we're going to work around it and neglect it.
1433. Why do I always have access problems in the afternoon. Seems like East coast assumes the rest of the world went home.
1434. Why haven't our computer resource managers been trained in ACES? It's impossible for them to understand our problems w/o the training and they don't even know where to turn for help.
1435. Data entered in this data base oftens does not save what was entered.

1436. the program is too slow
1437. 1391s: PACAF formatting standards conflict with 1391s generated from ACES. Also, why is the 1391 in ACES dated 1976...that form is obsolete.
1438. It doesn't contain the right data fields so you have to use something else.
1439. This system is slow. It is the most undesirable part of our job. We normally have enter information early before other people arrive just to get things done quicker.
1440. It is too inflexible, make a mistake and you have to dump the record.
1441. Bases are not being supported, in fact they have been chastised for complaining
1442. 611 Civil Engineering
1443. "A base level ACES-PM IPT was held at Wright Patterson AFB, Ohio, December 4-6. These inputs are aimed at the base user level to try to improve the operability and functionality of ACES-PM.

The number one complaint was...CONNECTIVITY of the web based version! Mr. Ron Stoner, SSG/BICE stated that due to the increased security, number and configuration of firewalls...troubleshooting the problem has been very difficult, time consuming and frustrating. They can troubleshoot both ends of the connection, but can not determine what is happening in between. The most the ACES-PM server has ever been tasked is a maximum of 37% of its resources. The problem has been identified to DISA for their action.

Mr. Stoner stated that the client based version is still working but that changes to the web based version do not apply to the client. As more changes are made to the web based versions, the less reliable the client based version will become. His advice is to stay with the web based version and keep reporting problems.

The members of the IPT discussed many options and potential modifications to ACES-PM that may be beneficial. The areas were broken into ACES-PM fixes that could be handled at a maintenance level. I have included those fixes as an attachment (ACES-PM Fixes.doc). Some of these fixes may show up in the next release. The others areas were enhancements to ACES-PM and IPT considerations. The enhancements category will cost the government and may not be seen for several years. The majority of them will require some level of approval and funding before implementation. The IPT considerations category were those things that the ACES-PM IPT need to consider to eliminate some shortcomings of the software, security and various programming requirements of differing fund sources.

Training is an issue because a lot of the items individuals brought to the table were due to a lack of training, or not knowing little tricks to get ACES-PM to do what is desired (i.e., doing a query in the projects form to be able to use the navigation buttons at the top of the form to go from one record to the next).

The enhancements document are items that were developed though discussions and are in relative priority. The priorities were developed and voted on by the committee. Action for implementation may not follow the relative order. Proponents were identified for each item and will advocate/describe the requirement fully for Mr. Marsh before the IPT in January.

Item 19 of the enhancement document are the IPT considerations. Proponents were also identified for each item and will be responsible for the development of the item to be more specific in scope and to answer questions that may arise.

Last as a probe into user rights and user needs, Mr. Stoner developed a document showing the various screens within ACES-PM with proposed access rights. This will become the basis for item number one in the enhancements document (Grey out areas not accessible based on user rights). Members are to review and comment before the January IPT.

Well, that about wraps-up the three days. I am sending this to all (To...Cc...) for your information and comments.

Below are the enhancements recommended with some justifications.

ACES PM ENHANCEMENTS
4-6 DEC 01

1. IN ALL AREAS OF ACES PM – GREY OUT AREAS THAT ARE CONTROLLED BY USER RIGHTS – Critical

JUSTIFICATION: This feature would benefit everyone by allowing users to know what they can update and what they can't updated based on the user rights. This feature would stop needless calls on the system to sends forms telling the user they are unable to update the field. The end result would be a shorter learning curve for new users, more productivity and less traffic to and from the system. Anytime a feature reduces calls on the system the result will enhance performance to the user.

2. Copying Projects - Critical
a. Bring more information over via check boxes for specific fields that will be the same.
b. Copy function should copy selectable fields
1. Facility #
2. Funding Source
3. Sub Source
4. Cat Code
5. WO#
6. FIM Rating

7. Cost (added)
8. FIM Justification
9. Wing#
10. Method of Design
11. Method of Construction
12. Project Delivery Method
13. Contract #
14. Contractor

JUSTIFICATION: The function for copying projects currently brings over a very small amount of data. The only data brought by copy with no supplemental boxes checked is the Project Number, Title, FY, EEIC w/no associated cost, FIM rating and PE. Most of the time projects are copied is because it has to be phased or because it is an IDIQ type project that uses the essentially the exact same data given some flexibility of choices.

The options to include environmental data and text are beneficial. Other options to pull other data based on need would prove highly beneficial and would eliminate a lot of unnecessary rebuilding of records. The more flexibility to field users the less the system has to respond. This option will reduce the amount of times a user has to occupy a record and will eliminate looking up data from another record just to manually update a new record. Monumental time and task savings to the field users.

3. User Preferences on Project Directory Screen - Critical
a. Work Order #
b. Contract #
c. Programmed Amt
d. CWE
e. CWE/PA
f. MAJCOM Priority
g. FIM Rating
h. Wing Priority
i. Local Status
j. Wing Number
k. Fund Status
l. Funds Indicator
m. Award Date

JUSTIFICATION: The ability to have user preferences such as those above will enhance the capabilities to review and cleanse the database. It would prove highly beneficial to any user who does not have report writing capabilities. This feature would allow a user to customize the way data is presented based on a specific need without having to go into individual records. The end result being less time a user has to be in the system, allowing more time for other

job requirements that are currently being left unaccomplished due to the nature of the beast. The above items are a few examples that were discussed by the IPT team.

The option to choose items based on business rules wound enhance performance based on users needs. Options for choices might be a sub component of user preferences, or possibly a new front-end allowing choices based on business rules such as programming, design, contracting actions and funding. The second option would be a method for allowing a user to get very specific on how they use the project directory for reviewing records and would be a way to provide flexibility to users. Flexibility allows users to tailor the system to fit their job thereby increasing productivity.

4. Project Quick Add – Critical
a. Facility entry needs to pull Cat Code info from Real Property Records
1. Cat Code fill entry needs pick list in order to update from primary code for that specific facility w/facility description also

5. Programming Tab - Critical
a. DEMO needs to be added in Valid Values for Funding Source when PE = XXX93 (Should stay in Valid Values for Sub Source when PE does not equal XXX93). Develop business rules that define ATFP usage similar to DEMO above
b. Add automatic info field that has selected IRR facility class based on Cat Code.
c. Valid Values for Project Status
1. Need Notice to Proceed Added to Pick List
2. Change Status to add a new status code to read "BDA- Bid Accepted.

6. FIM - Critical
a. Valid Values For FIM Rating – remove PML
b. Valid Values For FIM Rating – Define each rating so there is no question of usage (In Help Menu would be fine)
c. FIM triggers to eliminate errors as identified by FIM data tool

7. Contract Mgmt Tab in Projects - Critical
a. Add contract # on this screen
b. Actual % and funds status to be linked
c. Estimated completion date field added

8. 1391s - Critical
a. The form prints out as a Dec 76 form (ANG added has been revised)
b. Facilities Form
1. Block 10
a. O&M Requirement, Adequate, & Substandard do not print on 1391
b. Edit for Scope + Adequate Must Equal Requirement needs to be eliminated

2. Block 1-7

a. Block 8 – The amount should round up or down as appropriate (ANG added)

b. PE from project screen should carry through to this screen

c. Have FY and PE automatically update to 1391 when changes are made from project record

3. Block 11

a. Cannot add requirements and it only prints "As Required" (ANG added)

4. Block 9 – Facilities Tab

a. Copy title to top line and include summation that totals the line item's without having to print 1391 to verify

JUSTIFICATION: Many of the above measures are more fixes than enhancements and reflect the need to enhance the overall 1391 process that has been identified in IPT Considerations item 19d below. This will be addressed further in item 19d.

The major part of this recommendation is the way the block 9 is developed. Currently the user has to flip from the facilities tab to the DD Form 1391 tab to the block nine tab to see the total project cost. Not all cost estimates are done the way a block 9 is structured. Most of the time when one is building a 1391 block 9 from cost estimate they have to back in to the cost from the bottom line. When a 1391 is done this way you either have to sit down and write the block 9 out manual with a calculator or you have to flip back and forth between the facilities tab and the 1391.block 9 tab. A very time consuming process either way. A proposed solution would be to construct the block 9 as a single form having it look exactly the way it would appear in the DD1391. This would save multiple calls on the system and would decrease the learning curve.

One additional enhancement to the block 9 would be to have the top line automatically carry the project title, the project scope and unit of measure and have it to automatically total the sub-line items below on the facilities portion of the form. This would improve the ease of constructing a DD1391. A possible cross-over check with the programmed amount and the total funded cost or rounded cost would also be a nice feature to remind the programmer to check the DD1391 or to check the programmed amount any time one or the other is changed.

9. Project Milestones Area - Critical

a. Base/MAJCOM/HAF Defined Milestones for pick list

b. Automatic update of award date (only valid award date is the one under contracts)

10. IDIQ (Paving, Carpet, Roofs) - Critical

a. Bring back IWIMS functionality for Delivery Orders (WPAFB to provide sample report)

1. Process not defined well enough per Ron Stoner to rework

a. WPAFB to flowchart and decipher ACES process for SSG/AFCESA

b. Investigate usage of ACES as is and define

Needs

2. EEIC field for updates needed

11. Multiple Updates - Degraded

a. Need a form programmable based on business area based on user preference picks (similar to prioritized project form)

1. FIM/Justification
2. CWE
3. FY
4. Local Status
5. Status
6. Fund Status
7. Funds Indicator Work Order #
8. Contract #
9. Programmed Amount
10. CWE
11. MAJCOM Priority
12. Wing Priority
13. Wing Number
14. Award Date

JUSTIFICATION: This recommendation is very similar to item 3 above. The above is a few possible picks but many other field based on business rule could prove beneficial. The ability to have user preferences such as those above will enhance the capabilities to quickly update the database without making a lot of calls on the system going from one record to the next. This feature would allow a user to customize the way data is updated based on a specific need without having to go into individual records. Most of the time a person is using the system at base level they are doing repetitive updates to the same data in different records i.e. updating the funds status and fund indicator at year-end The end result being less time a user has to be in the system, allowing more time for other job requirements that are currently being left unaccomplished due to the nature of the beast. The above items are a few examples that were discussed by the IPT team.

The option to choose items based on business rules wound enhance performance based on users needs. Flexibility allows users to tailor the system to fit their job thereby increasing productivity

12. Design - Degraded

a. Method of Design -Redefine description of T - Traditional Design Bid Build
b. Change Fund Status and Fund Indicator to display design info

13. Project Managers Area - Degraded
a. Change form to include data straight across as before
b. Possible pick list of personnel (Personnel Readiness List)

14. Discoverer - Degraded
a. ADVANCED TRAINING NEEDED
b. Consider users group/forum web site with bulletin board for cross feed and
      questions and possible FTP site for sharing well documented reports. If the
      AF Portal is the appropriate media then a possible sub-section in the CE
      Community specific to ACES PM issues with invitation to all of the CE users.

JUSTIFICATION: Discoverer is a fairly straight forward program however the
      majority of the users (not the nerd crowd) can make the basic report, but the
      construction of limiting conditions and calculations elude the typical user. It is
      cumbersome to write multi-level condition statements. The entire IPT team
      tried to conquer a relatively simple compound condition statement and never
      succeeded. This is a good indication that that additional training is required or
      the user defined configuration of the project directory screen is needed.

One additional topic of discussion was to have a resource for users to share data and
      ask questions as in item 14b above. This would be a huge benefit to users and
      would give users a place to find answers. The potential cost saving to the
      government in terms of reinventing the wheel by every user. There are a large
      number of people consuming huge amounts of time trying to write reports and
      not being able to get the results they want. This type resource would be a very
      big benefit and and productivity enhancement.

15. Prioritize Projects - Minimal
a. Add Wing Priority to the Priority Update Form (Prioritize Projects Program)
b. Add Wing Number

16. Funding Tab in Projects - Minimal
a. Add PR number to this screen

17. Project Uniques Area - Minimal
a. User defined list of picks
b. Organization on Programming screen

18. All Capital Letters for Certain Fields - Minimal
a. Milestones
b. Project Mgr

c. Project Title

19. IPT Considerations
a. IPT needs to define business processes to help with "other" costs that are not in
   ACES but are COMM, furniture, etc. Where or should this be displayed in the
   PM module? Refer to the old CID field in PDC (ALFONSO)
b. IPT needs to define this process - Unlink MILCON from Housing/NAF items to
   afford proper update rights for base managed projects. Recognize that
   MFH/NAF should be treated like O&M vs. MILCON (DWELLEN)
c. IPT needs to clarify business rules for Funding Source, Sub Source, PE, and EEIC -
   Map back to FM REG 65-601 (VANSCOY)
d. IPT should better define business processes for 1391 with regards to all program
   types. As an example – What constitutes line 1 of Block 9?

I you have quesitons please call.

Respectfully,

(name removed)
1444. A developer should come out to Kadena and go through the housing process
       with a housing counselor who's been here for a while. Management changes
       every so many years but some employees have been through change after
       change and can identify what process works. Kadena has one of the most
       unique housing situations, as we support all branches of service including
       civilians and special assignments including DODDS teachers.
1445. A good portion of my comments I filled into the 3 write-in questions you
       provided. About the only good thing I can say about WIMS is that it had been
       around for a while, people seemed to know how to use at least the simple
       portions, and data didn't seem to fall out every time you migrated to a new
       module. I can't say any of those good things about ACES in its current
       incarnation. I remember when I came in as a 2Lt and they told me that this
       wonderful system was coming out in a few months but they were working out
       the bugs. 5 years later, it's not even fully rolled out and there are more bugs
       than I've ever seen with WIMS.
1446. ACES Database, and Formflow, appear to be the two most antiquated
       programs we use. They cost the Air Force hours of professional time that
       could be saved by using programs that are easier to access, easier to update,
       and more forgiving of errors. Also, if we could agree upon the information
       needed and the format, this could save a lot of expense from having to
       research and re-format data each year.
1447. Aces does not work for the dorm's,especially here at Osan where and entire
       dorm changes in a year. We have to RAS in and IF we are lucky and all the
       links are correct, we may get in. To move some one in the system is time
       consuming. We keep and mostly work off an MS Access bata base that is
       more user friendly, less time consuming and more easily modifiable with a

backup built into Excell and with the touch of one button both produts updated. There are too many data bases built in to ACES/WIMS that it eats up to much space on the hard drive. Anything less than a Pentium 3 or 4 and it locks up your computer. Each area in the program should be independant.

1448.   ACES Engineering module is used to update information for use by others, like MAJCOM. Data used on a day to day basis is tracked using a local ACCESS database.

1449.   ACES has serious user limitations when compared to the older IWIMS. Unfortunately, the folks who developed the system designed it to go Web based so they could cut manpower at the central ACES system at Gunter. That's great for them, but the thousands of "customers" that use ACES are now stuck with an inferior product. True, it's windows driven, which makes it easy to learn, but the aforementioned lack of report writing SIGNIFICANTLY hampers our ability to retrieve the data we use on a regular basis (to track funds obligation, to develop execution metrics, etc. etc.). Another great feature of the old IWIMS was the ability to find a project by simply typing in the project number and hitting <enter>. Now, we have to type in 4 different fields just to get a narrowed list of projects, then we have to scroll to find the individual project. Finally, the "new, improved" Web driven ACES is slow and only as reliable as one's internet connection. Good Luck with your Masters.

1450.   ACES is a good idea in theory unfortunately it was pushed out into the Air FOrce too soon and not properly introduced. Meaning that the system seems to be forceably implemented before all the bugs were worked out, it was attempted to simply take all the projects from A-106 and copy them straight into ACES. Unfortunately all this did was jumble up project numbers and lose information. In the process, this caused a nightmare for programmers to try and fix, a task that should be simple cut and paste into new correct project numbers except the copy function does not copy everything, in fact it copies very little. Lastly, the fact that it takes anywhere from 10 seconds to 10 minutes for the program to process any new data makes the project input time range from 5 minutes to 30 minutes per project, this is if and only if the program does not freeze which at the same time kills your computer because it devotes every ounce of memory and proccessing capabilities to trying to reconnect and retrieve the information that it just lost.

1451.   ACES is a useful tool for projects that are already completed and otherwise completely necessary. Although I marked disagree in most positive assertion questions, I still believe the system is totally necessary and generally reliable/capable for the task at hand. However, due to the extremely fast tempo in my flight, I would be crazy to rely on ACES for up-to-date info on any given project. I am far better off "meeting the right people" and asking direct questions on the status of a given aspect of project development. This way, I get the latest word and I have a face to associate with the project. So in short, there is nothing wrong with ACES as long as you do not become unrealistic about what it is actually good for. IOW, to rely on ACES and come

up with bad info and use "but it was on ACES" as an excuse will only prompt laughter from my chain of command. So why use it for anything other than a slow data logging system that it is?

1452. ACES is getting better but it still has a way to go. Probably the biggest headache is tyring to input a 1391. If you have more than one primary facility the numbers do not add up. It is also important for all flights (customer service, real property, engineering) to use the same database.

1453. ACES is not consistant. One time it will do one thing and next time you use it, it will do something else. Sometimes it works very well.

1454. ACES is really lacking in a report style print-out. The fact that we can only print the screen and cannot generate a report straight from ACES is a nuisance. Discoverer is not user friendly and is not a very viable way of generating a report on one project.

1455. ACES is slow, slow, slow.... This is the MAIN problem..

1456. ACES is to slow, please fix it, travel out here and experience it for yourself, don't take our word for it. It takes to long to input data. To redundant.

1457. ACES is very slow. Still prefer IWIMS program much better. IWIMS was much more user friendly.

1458. ACES needs CPR. The functional modules are obtaining IOC too slow. In the mean time, CE Commanders and squadrons are left without a fully-functioning, cross-cuting management information system. I'm still hoping the functional module implementation will be accelerated, including standard reporting (i.e. CEC project lists) capability at the unit level. Additionally, I am looking forward to a Commander's Module that brings pertinent information & menus together for a commanders' use.

1459. ACES needs to be refined so that the roles accurately reflect the jobs of the individuals. If you cannot update a field the system should not let you update it from the beginning, and not wait until data is saved. In many cases users are given full role rights in order for them to accomplish routine duties.

1460. ACES needs to include a spell check!!

1461. ACES often works very slowly, so it doesn't makes pleasure, to work with it.

1462. ACES TECHNICAL EXPERTISE IS DESPERATELY NEEDED PERHAPS ON A REGIONALIZED LEVEL. IF THIS NOT FEASIBLE, THEN AN EXTENSIVE TRAINING PROGRAM AT EACH BASE LASTING MORE THAN JUST A FEW DAYS. PRODUCTIVITY WOULD REACH HIGH LEVELS IF SOMEONE MADE THE CONCERTED EFFORT TO ENSURE THE BASICS AND NUANCES OF ACES PROGRAMS WERE MORE FAMILIAR TO THE MASSES.

1463. ACES was found to be very slow and required numerous key strokes. In addition, many of the reports written couldn't be manipulated (sorted).

1464. ACES would be fine if it were as fast as PCMS. But since its not, STILL NOT, it is not worth it. And the fact one has to use a totally independant reporting system is further evidence of it being "patched" together. You would never design, build and fly a plane this way... hit or miss! trial and error! not with you in the cockpit and your family in the hold...!!!

1465. ACES/PM is unsatisfactory.
1466. ACES-HM is a wonderful system. I can't wait to see more improvements in the next 5 years.
1467. ACESPM is a very slow database....
1468. ACES-PM is difficult to navigate, slow when using through the internet. As a MAJCOM PM we only input data that management requests, but do not make use of the data ourselves.
1469. ACES-PM is too slow!!!!
1470. ACES-PM should allow end-users the capability to generate ad-hoc reports.
1471. ACES-RP NEEDS TO BE GEARED FOR THE RP FOLKS. MAKE IT BETTER, ONE PAGE UPDATE LIKE IWIMS USED TO BE. THE JOURNAL VIEW NEEDS TO BE MORE COMPREHENSIVE. IF WE ARE UPDATING A FACILITY, ALL THE INFO UPDATED SHOULD BE ON ONE JOURNAL VIEW NOT EVERY SINGLE LITTLE AREA HAVE ITS OWN JV.TO RETAIN THE FILES, THERE IS TOO MUCH PIECES OF PAPER FOR ALL THE TRANSACTIONS WE DO. ITS HARD TO FIND THE ACES REPORTS ON THE DRAW DOWN MENUS AND ALSO IF YOU NEED TO MAKE MULTIPLE ONES, YOU HAVE TO RETURN TO THE MAIN MENU AND CLICK TO FIND IT AGAIN. WE NEED UNLIMITED SPACE IN THE REMARK AREAS UNDER EACH FACILITY TO RECORD OUR TRANSACTIONS. AS IT IS NOW, WE CAN ONLY RECORD A LIMITED AMOUNT AND THEN WE HAVE TO DELETE THE INFO. WE HAVE NO WAY OF RETAINING THE INFO FOR LATER AND STILL RESORT TO MANUALLY RECORDING OUR TRANSACTIONS. THIS CREATES EXTRA WORK WHEN I THOUGHT THIS PROG WAS SUPPOSE TO MAKE IT EASIER. OUR FILES ARE PERPETUAL AND WITH THE AMOUNT OF PAPERS WE PRINT OUT FOR OUR JV'S, WE ARE RUNNING OUT OF SPACE IN THE OFFICE. THIS IS A CONCERN FOR ALL RP OFFICES-NOT ENOUGH SPACE TO STORE OUR TRANSACTIONS. MAKE ACES-RP BETTER FOR THE RP FOLKS AND EASIER, SO WE WILL BE MORE INCLINED TO USE IT AND GET MORE INFORMATION FROM THE SYSTEM. THIS IS JUST A TIP OF THE ICEBURG, BUT YOU CAN SEE THAT REAL PROPERTY IS NOT HAPPY. I HOPE YOU CAN PASS IT ON THAT THIS PROGRAM WAS NOT USER FRIENDLY AND CREATED MORE WORK AND PAPERWORK FOR US.IT GIVES US REJECTS BUT WE DON'T KNOW WHY.IT TAKES US LONGER TO INPUT OUR INFORMATION AND ALSO EXTRACT INFO. HELP US HELP EVERYONE IN CE.
1472. AFPC Assignment Team doesn't use ACES/WIMS. We have our own frustrating database. bcm
1473. AGE HAS NOTHING TO DO WITH USING THIS SYSTEM. I HAVE TAKEN NUMEROUS COLLEGE COMPUTER COURSES AND WORKED ON NUMEROUS DATA BASES. THIS ONE NEEDS MUCH IMPROVEMENT.

1474. Also, in the ACES active/inactive function, there is no way to toggle between active and inactive projects without backing out of the ACES system and logging back in. This is a very time consuming task.

1475. Also, when the program is funded and completed, a "tickler" note should be passed to the RP module for inclusion in the real property module. This would provide funding information in the record.

1476. Am rather new to the CE community. Currently use IWIMS to establish work orders. Presently scheduled to attend IWIMS class to get a better handle of the IWIMS program.

1477. amanda.birch@elmendorf.af.mil

1478. And also Discoverer report program is hard to use. It takes time to find data fields and their link. Some of them are not even linked. We need some instruction or good training of Discoverer program to use it effectively.

1479. and get it right the first time. Programs such as these are to make everyones

1480. As a former member of the initial WIMS installation team for command, very little improvement was shown when IWIMS was released. The programs are no longer "user friendly". The report programs are absolutely useless and most times a manual effort is required to obtain information needed. A new software program is needed, but as in the past, the daily users are never polled or asked for input in the development stage. Command just assumes every base has the same operating needs and develops a "generic" crapshoot of programs. When Gunther took over control, base level additions or deletions of unique operating requirements became void. Now getting two systems ACES/IWIMS to talk to each other is the current hurtle, and now organizations are no longer on the same page on the same day. If a new program is developed with "user input" a semi-annual review should be required to redefine the specific needs of each individual base. Thank you for this opportunity to address this issue, it's been along time coming. Good luck.

1481. As a MAJCOM Branch Chief, I do not personally use the database. However, my people depend heavily on it.

1482. As a member of the IPT and seeing the process used to develop the ACES-FMO module; I feel too many mistakes were made. Data from the old system was not "portable' to the new system. It was designed from the top down, not bottom up; with HQ's wants taking priority over the needs of the bases. The contractor swapped the programmer on our project, using someone without the 2-3 months background knowledge gained by the original programmer. In the interest of "cost and/or time savings" we got a package that didn't work as advertised, had/has too many errors, and was/is not as functional as what it replaced; even though it's been in use at base level for several years. We may eventually get what we need, but for now it is a problem because of the original design premise.

1483. ASPECTS OF CEMAS IN DETAIL, GIVE ME A CALL (name removed)

1484. Assigned to 554 RED HORSE. We do not use IWIMS or ACES.

1485. At Kadena AB we use IWIMS to track Work Orders and RWP and ACES to track projects. My major complaint with ACES is with doing a facility search.

ACES will not search for multi facility projects. Another complaint about ACES, which I'm sure you have heard before, this program is slow. I think ACES is slower than IWIMS.

1486. at the big picture before implementing these types of programs. It takes way

1487. Because I have had some unique assignments (i.e., Bare Base, foreign exchange, and now IG team) I have not used WIMS/ACES since 1997.

1488. Being at Kadena, AB Okinawa, Japan the rate of data transfer is very slow during the normal duty day. Wims/Iwims was alot faster until they moved the server to the United States of America. Now it is very slow during the day. (E.g. Reports at night only take 5 to 10 minutes to run where as during the day they take 3 to 5 hours to run : Inefficient). NOTE: ACES is even slower. When I worked with the ACES Real Property module it took me over 2 hours to enter one Facility Manager letter. (NOTE: Due to ACES inefficiency with this program we do not use it.) We use a Excel database to keep track of Facility Managers and Training requirements at Kadena AB. I hope the USAF can

1489. BUT WE COULD NEVER GET CONSENUS DUE TO THE CONFLICTING VIEW POINTS AND REGULATIONS.

1490. BUYERS. OUR ORGANIZATION TRIED, IN THE BEGINNING,(1988) TO RESOLVE SOME CEMAS ISSUES

1491. C 00-xxxx and they deal only with that number. Its not possible to find this project ; only if you search with a TYFRxxxxxx number.

1492. Can the base use "X" numbering system? Primary project number is SMYU 993011 (MILCON). Once the project number is reported to MAJCOM, (at Base level) we're locked out and there is no way to update for tracking purpose. So, we use SMYU 993011X under O&M with many fields left unfilled. Contract Management uses ACESPM to track the project status after its awarded. Isn't there someway to give the base more access rights to update/use database for MILCON projects?

1493. (name removed)

1494. (name removed)

1495. Client ACES is very responsive, but we have been directed to use Web ACES through AF portal internet. The Web ACES is much slower and users are frequently bumped off the internet.

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1502. Client ACES is very responsive, but we have been directed to use Web ACES through AF portal internet. The Web ACES is much slower and users are frequently bumped off the internet.
1503. Command and Air Staff review is very slow because you have to go through each project. In the next week or two, we are going to issue funds. This requires us to open up each of the projects (several steps) and input a number. To do this to over 100 projects will take a day. Air Staff is using a shortcut method where they input the data into a spreadsheet and then upload the data into ACES with substantial time savings. However, this is not the correct procedure to load data into ACES. If we have to build bypasses to the system to get our jobs done better and faster, that shows there is a very big problem with the system. A database's most important reason for existance is to allow quicker and better management of data. ACES fails on this measure. Period.
1504. Could use work order query function in ACESPM and a way to talk to Work Order managers -- system does not allow this now. Local Status fields are difficult to interpret -- need clearer inputs. Contract Management has difficulty with automatic Milestones and updating them correctly.
1505. Curious as to your project's hypothesis. Are you trying to prove/disprove or improve ACES? I'm working GeoBase at AFCEE. We're assisting the implementation of GeoBase around the AF. GeoBase will likely involve ACES data, but I'd be interested in your hypotheses, goals, and results. Feel free to contact me if any of my comments or questions interest you.
1506. Current method of access to the system is cumbersome and restricts use of the system by many personnel. While ACES is an improvement over IWIMS it needs additional work to make it more user-friendly. The first improvement would be to make the response time quicker. The next improvement should be to streamline the manner in which multiple year projects data entry can be simplified so that the unchanging data from year to year does not have to be entered over and over again.
1507. CURRENTLY BEING USED BY ALL MAJOR COMMANDS. ARBITRARY RULES ABOUT AGED LISTINGS,
1508. Dan L. Harris, DynCorp CE/Architect
1509. DETAILED FOR DAILY USE. EXTRA CODES AND CYPHERS ONLY COMPLICATE MATTERS. TRYING TO TIE
1510. Diana Keener

1511. Don't give up on converting IWIMS into the ACES Operations Flight module! ACES is a very good program, but the slow internet connection makes it awkward to use sometimes. I was stationed at Tinker AFB in 1981 when the WIMS Tiger Team was formed. I saw WIMS programs be developed and tested before our eyes, and it was light-years ahead of the old BEAMS system (which didn't officially get phased out until 1989 or so). Similarly, ACES is light-years ahead of WIMS/IWIMS. Like it or not, ACES is the official USAF Civil Engineering database, and we MUST use it. Keep up the work!

1512. drastically improve on the data transfer rate before ACES is brought on-line for Facility Maintenance!

1513. Due to more data fields than I-WIMS, the ACES-HM system works so slow. I know the system is worldwide one and has to meet all requirement all housing office has. But we do not use more than 4/5 of all data fields. I think we all would rather have a faster compouter program than one with many data fields. The program is supposed to minimize the number of the fields.

1514. DUE TO THE LACK OR SPEED AND THE COMPLEXITY OF INPUTTING DATA, I ONLY GO INTO ACES WHEN ABSOLUTELY NECESSARY. IWIMS-RP WAS UP AND RUNNING ALL DAY GOOD WORKING TOOL---ACES IS USED MAYBE 15-20 MINUTES TOPS ON ANY GIVEN DAY.

1515. ECT. THIS COULD BE DONE BY CONTRACT REDUCING THE CRAFTSMAN'S TIME DOING ADMIN TYPE

1516. Eielson is a proud user of ACES-HM and are very happy with the FAB working issues and possible problems.

1517. for more information please call tsgt don emerson at dyess afb texas. i have no problems with identifying myself on this survey

1518. FOR THE RECORD IWIMS COULD BE VASTLY IMPROVED, IF THE ENTIRE DATABASE WAS THE SAME

1519. FROM MY WIEWPOINT A MANUFACTUERS DESCRIPTION, PART #, PRICE IS USUALLY SUFFICENTLY

1520. Give'm hell!

1521. Good luck on your thesis from this AFIT grad.

1522. Good luck with your thesis.

1523. Good luck with your thesis.

1524. Good Luck!

1525. Good luck.

1526. Have also suggested to Environmental people at AMC HQ to submit samples of tabs in the ACES database with required blocks to be filled in for them to validate the project.

1527. I also use the Aces Real Property System and the Aces Engineering System. Currently the ACES Real Property system does not currently interface totally into IWIMS thus facilities loaded in ACES do not move into IWIMS which creates many problems. Also until Bldg Mgr data from ACES crosses over to IWIMS, data on job orders written in IWIMS is not accurate unless the bldg mgr program in IWIMS is also updated, thus creating duplicate work tasks.

The ACES system also would work better if there was some way to have more than one window open at time and if the response time to changing screens was much faster.

1528. I am a 3E671 by trade assigned here as a 9D000. I filled out this survey as a 9D000. We are required to use the ACES housing module. I am unable to log into it most of the time. It is not very user friendly but a slight improvement from the IWIMS/WIMS. As a Operations troop I use IWIMS and find it to be tedious. Creating reports are tasking and very difficult. In fact unless you are very familiar with the system it is not possible for you to extract needed information. This gives me a great sense of job security though. The IWIMS system is old slow and very outdated. I understand that ACES is suppose to replace IWIMS in the future. Now that I have worked with ACES I do not see the advantage of replacing one Antiquated system with another. Don't get me wrong it beats filling out forms and doing it on paper, but with modern technology we could do a lot better.

1529. I am a CE Staff Officer working for the Chief, Air Force Reserve at the Air Staff (HQ USAF/RE). I work planning and programming issues, but do not use ACES or WIMS at all in my job.

1530. I am a relative newcomer to the Air Force team. There is a strong need for modules of the database to include CADD and GIS data, all interrelated to functions of Real Property, Engineering, Engineering Operations, Fire and Security functions etc. All this needs to be directly connected to the current ACES information.

1531. I am assigned to a tenant unit here on Malmstrom (RED HORSE). We really access the IWIMS, if we do it is to track in house dsw's or 332's. Our planners use IWIMS from all bases to plan job throughout the USA.

1532. I am assigned to HQ USAF/ILEP and do not use a CE database in my job.

1533. I am at HQ level so I am not in a flight. I am in the Programming division, but it doesn't fall under engineering. We use ACES PM - I guess this is what you mean by the engineering module. The data that is collected is only good if the bases enter the information in and do it correctly.

1534. I am currently doig a tour in XP.

1535. I am sure this survey is useful; however, I am curious of the purpose. Certainly, it is not to provide data on whether or not to continue with ACES. ACES should be here to stay. My concern as an almost constant user of ACES is to make it more practical in daily use. For example, there is no useful purpose served in forcing the user to enter bid opening data prior to award data. Should data inadvertantly be entered in reverse order, the contracting data -- including mods and change orders -- must be removed from the database in order for the bid data to be entered. The requirement for this rather parochial approach eludes me. Another serious flaw is the requirement that a user be part of "the team", whatever that might be, in order to update the database. MILCON projects exist in the database that are for out-year programs. They have never been submitted and are of no use to anybody but base-level programmers. Yet, the projects cannot be updated because the

programmer is not a part of "the team". Furthermore, nobody knows who the team is nor how to either get on the team or talk with somebody is is on the team. Nobody can be found to help with the problem. Projects that subject users to this restriction cannot be updated and, what's worse, they cannot even be removed from the database. Keep ACES but remove the purposless usage restrictions.

1536. I am the Chief Engineer on the staff at Headquarters Eighth Air Force. I've asked for access to the installation's (2CES) ACES/IWIMS database, but have been refused. I can't even have "READ ONLY" access. Thus, I cannot review projects nor learn how to navigate the database.

1537. I am the Chief of Information Systems at Andersen AFB, most of this data does not apply to myself. However as the SA for both I-WIMS/ACES I know that I-WIMS has been a great tool for CE.

1538. I am (name removed) and I work directly with IWIMS as the Superintendent Operations Mangement at (unit removed). We train pipeline and cross training students on IWIMS.

1539. I am using IWIMS, ACES and ABSS however, some items of these database system do not much with our local use. Also, system itself is out of date if comparing with commercial database system. Access speed is very low, and I have to wait a couple of minutes to get information.

1540. I can not wait for the day that we get a more user friendly and auditable system!

1541. i completely understand that changes in how the job gets done happens from time to time but it only makes good business sense that before ANY changes happen that maybe some of the people that actually do the job (versus a group of people that haven't got a clue) have some input on how to improve a process. this ACES program is a joke, i find myself being delayed due to disconnects or just unable to find information and having to rely on DIMS. since i have to fall back to our dims program, that means i must maintain 2 complete data bases to get the job done. now you have forced me to do twice the work. thanks for your effort to keep me overtask and undermanned. p.s have a nice day

1542. I do not believe question 20 is necessary to conduct your survey....unless you're trying to prove that men are somehow different than women in their job taskings for the USAF.

1543. I do not currently use a CE database, but we are looking into ACES. I am interested in receiving a copy of your report upon completion. (name removed)

1544. I DO REALIZE A LOT OF THE PROBLEMS ENCOUNTERED ARE DUE TO THE POPLE WHO IMPUT'S THE INFORMATION INTO THE SYSTEM. SOME OF IT IS DUE TO THE FACT THERE IS NOT A LARGE ENOUGH DICTIONARY TO USE FOR THE PROGRAM.HOWEVER MOST OF IT IS DUE TO PURE LAZYNESS ON THE PEOPLE USING THE SYSTEM AND THEIR UNWILLINGNESS TO SPEND 5 MINN TO

GIVE A FUTHER DISCRIPTION OF THE PART OR ITEM THEY IMPUT INTO THE COMPUTER DATA BASE.

1545. I feel ACES-HM IS awesome. The most important issue with ACES-HM is this: Enter all data required and all you can even if not required. Oracle will run reports for any information you ask for, however, reports will only be as good as data entered. Cannot stress this enough!!!!

1546. I feel the only problem with this database, is how often it goes down. It is really great, though.

1547. I have 2 complaints about the database: 1, it is slow, and 2, there is no way to change the project number. The second is very inportant because PACAF uses a project number scheme that has the FY imbedded in it. When the project slips a year, we have to re-coppy the info to a new project record and the copy function only takes a small portion of the inputs. This makes it very time consuming to keep up to date at year end--when projects are moving around, and we need the system most!

1548. I have only been working in Housing for approximately 2 months. This database (ACES), is one of the worst, if not the worst, I have ever worked with. I also understand no formal operational training has been given to anyone in the Housing Office. This is unacceptable for a program that is supposed to be so important and probably cost out the ying yang. I am ashamed the the Air Force has anything to do with it.

1549. I hear that the ACES is a centralized data system where all the data is stored at one location. I see a problem where if the central location is attacked, damaged, bugged, or problemed, it would stagnate and maybe even stop operations to all areas that use the ACES system. Furthermore the security would have to be very tight to prevent hacking into the system since there is only one place that a hacker might have to penetrate. I belive desentralized information might be a better solution from a security stand point also.

1550. I input exact same info to Microsoft Money. I don't understand why I (we) input same info twice? I would like to know the reason why we use CEMAS.

1551. I just finished a tour as the Operations Chief at Hurlburt Field. I don't use the IWIMS system in my current job, but I answered the questions from my experience at Hurlburt.

1552. I just saw some info on developing applications for the EOD career field within ACES. If they actually incorporate half of the things they're talking about then it will be an amazing system. However, I'd be surprised if 10% of the applications actually make it into the system.

1553. I really hope when the work order program comes out for ACES that it is better than the Real Property module. I have work with this one with the building manager portion and I do not like it at all. Having to go to one area to input the manager and than another area to assign them to a bldg takes way too much time.

1554. I run the airpack program for the department. My data base is in microsoft Access. I have tried to convert to ACESFD many times, but the bugs within

the database prevent me from using it. The problem as far as i know is being looked at.

1555. I started the class for ACES, was in it for about 1 hour when my supervisor pulled me out for a paint problem he thought might bite him in the a--!! His words to me were " you can get the training later, I need you now." So here it is a year later and no training.!! I'm a QAE and feel I was short changed.

1556. I think there are too many screens we have to deal with. Under IWIMS, you could input an application with 3 screens. Under ACES, it takes 7 screens. And, under ACES, we have to use ORACLE to write reports, and we are not able to access any historical data. In the off base housing mode, when you print out an off-base listing for a customer, it prints one house per page. IWIMS used to print 3 listings per page. It is slow. You can be working in the system, and it will knock you out. ACES needs some work!

1557. I understand the biggest concern or problem is that there is no link between projects and work orders as there was before in IWIMS. ACES is also no faster than IWIMS.

1558. I use the ACES-PM module everyday. Like any other databases, ACES is totally dependent on the inputs from the appropriate functions in the field. In USAFE, we have turned the corner on having our base programmers continually update the required fields. But, this is not the case for the construction management personnel. They still use Access or Excell sheets to track on-going construction. I think this will change as ACES is made user friendly and training is provided to the field. IPTs have been created to address these issues and eventually everyone will be on-line.

1559. I used the IWIMS and ACES database extensivly for two years as a programmer. Currently my job does not require the use of the ACES system and will color the results of the survey. The ACES system I think is an improvement over the IWIMS system. The windows based interaction is easier to understand for beginners. The ACES is much more linear in nature, you must do "A, B, C.." in order for it to work properly. In IWIMS this was not the case. ACES usually forces you to do the correct step, but also can get stuck in an error loop when mistakes are made. The major drawback to the ACES system is the processing speed. It can take over an hour to input one project, at AFIT in the training class with the independent network I could do it in under 5 minutes.

1560. I will be accessing ACES and IWIMS starting next month to monitor status changes on projects in response to ECAMP write-ups

1561. I will use ACES when the environmnetal module is built. It is under developemnt now.

1562. I work at HQ ACC, in the Readiness Division. Not certain if your survey in question 24 is assuming base level.

1563. I work in the JSF SPO (System Program Office) as an Environmental Safety and Health Officer. Even though I am in the CE career field, I do not do typical CE officer work. I wouldn't want to be an outlier in your stats. I

graduated from the GEEM program last year so I know all about (name removed).

1564. I would be very interested in being notified of the results of this survey and also if any positive steps will be taken to improve the ACES EM modules.

1565. I would like to see a more user friendly system. Better search engines. And easier to find the info you need to use. After using such items as microsoft and other software it is hard to use iwims. Hard to figure the commands

1566. I would like to see interactivity with the RP and PM modules. Some PM decisions are based on real property information.

1567. I would like to see the 3 major data bases tied together better(IWIMS, ACES, and CEMAS). I would like to be able to get a complete history on a facility with out having to run mulitple reports and then trying to tie all the data together to some how make sense. In CEMAS you can only write reports for a 1 month period. In IWIMS i will have to write two reports one from history and one active files to make sure I get all the info and overseas the server response time is so slow. With ACES I will have to run a seperate report to get info and the information might in seperate modules and you have may or may not be able to access all the modules????? I think we should look into a way to better tie all the systems together.

1568. I would not recommend changing the data base in ACES, but would recommend making it easier to use. Eliminate the search icon. Simply enter a project number and have the project displayed on the screen. When accessing the net, it would be nice to have the system automatically recognize what base you are from and only include your projects. Eliminate the need for the SGBP/SGER etc. Have the system recognize a project by number alone even if the project is phased. For example, I could enter 03-0004, and be told that no such project exists, when in fact 03-0004P1 and 03-0004P2 are in the system. Some of my answers concerning the usefulness of ACES reflect the fact that many of my people have had dificulty entering data and, therefore when I pull up a project, I get bad data. I spend more time getting information directly from my design chief and from my PMs than I should.

1569. I WOULD REALLY LIKE TO SEE THE PROGRAM BE ABLE TO HAVE AN OPTION THAT WILL DUPLICATE PERSONAL DATA SUCH AS NAME, LOCATION, AND PHONE NUMBERS WHILE PREPARING MULTIPLE W/O 'S FOR THE SAME REQUESTER. THIS WOULD INCREASE PROFICIENCY, TIME AND REDUCE THE ROOM FOR ERROR. THANK YOU FOR GRANTING ME THE OPPORTUNITY TO VOICE MY OPINION.

1570. If and when ACES performs as advertised, it will be a useful tool. In its current condition, it discourages useage because it is unreliable (lost data, connectivity) and very, very slow - on the order of a 2400 modem and 486 home computer. Extremely frustrating to those of use who have suspenses and deadlines to meet with inadequate tools to work with.

1571. If and when these issues are resolved, this will be an excellent program.

1572. If there's anyway ACES can be sped up will really make the job more efficient. Lots of time are wasted specially when there are suspenses that should be done. Also I wish that IWIMS and ACES are merged so that when one is down, one is available and shares the same information. Thank you.

1573. If your are going to modify the current database systems could you modify the the Review Transaction History File with in the CEMAS directory? Currently when you look up the history of an item you can only view one month at a time. If the system would allow you to see the entire history of an item from when it first entered the system to the present it would save a tremondous amount of time.

1574. I'll attend an ACES-course soon and I think I'll use it more often.

1575. I'll be glad to send you the ACCESS program we developed if you are interested.

1576. I'm a former Chief of Programming who physically transitioned from IWIMS to ACES with Major George. Although the ACES interface is better than IWIMS and there are better report writing capabilities, those of us in PACAF cannot be efficient because ACES is so slow. It is an absolute requirement to have a local or regional server. Waiting times can range from 30 seconds to 10 minutes depending on the function being performed.

1577. I'm at a headquarters job, not base level CE.

1578. I'm currently not in a CE function and am assigned to HQ AMC/IG. I don't have access to IWIMS/ACES or have a need to use it. Im my last CE job (AMC/CE) I was trained in ACES and had access, but never had a need to use. Before that I was in base level CE operations and used IWIMS frequently and it was critical to getting my job done.

1579. I'm currently working in Maintenance Engineering! My job in a nut shell is trying to match up projects with work orders between ACES and IWIMS. A job that wouldn't exist if things were working the way they were meant to! Remember the days when it was just IWIMS! Now we hace ACES, IWIMS, EXEL databases, and ACCESS databases many of which are unique to a specific section or office. I didn't get to comment on the Real property ACES! Once again ACES and IWIMS are not talking! Facility managers programs, customer codes, new facility are not being updated as they should! The word is if it is not in ACES they don't update it?? So things are going untouched!

1580. I'm extremely worried that ACES is going to be a big bust. It barely works now with just the Project Management module. How slow will it be and how many problems are we going to have when all of the modules are in place.

1581. I'm sure my answers will prove very worthwhile to your "thesis", seeing as I do not use either database.

1582. I'm the Readiness Flight Commander. We use other databases fielded from the Logistics or XP folks.

1583. In future, when sending a survey of this kind, you might get a better response if you explain how the results will benefit the respondent (i.e. purpose of your research, expected outcomes, etc.)

1584. In Germany we have projects designed by LBB . They assign a separat number like

1585. In preparing future ACES modules, I think it would be extremely helpful for the people in the field to have input as to the format, layout, etc of the data. Also, there is a SERIOUS deficiency with the Discoverer report generation capabilities in that you can't build decent looking reports. I have been able to create some reports which run in Access but it's a tough task unless you're a computer expert or can get the right help. The report options in Access need to be simplified and training provided ASAP.

1586. IN THIS LIGHT: A HIGH QUALITY CSL GENERALLY REQUIRES 2 HOURS OF RESEARCH BY A CRAFT-

1587. Is there a way to speed the IWIMS system? There are also connection problems while working on the system. These interuption sometime slows my process or limits my work. Fixing these will increase work production by getting the job, parts order, and status faster to my workers.

1588. IT ALSO NEEDS TO BE ABLE TO LINK TO WORK ORDERS AND PROJECTS. THERE IS NO LINKAGE NOW WITH THE WORKORDERS AND PROJECTS AND SO ITS HARD TO RESEARCH.

1589. It gets the job done, but with todays' technology I'm sure there is a faster program that could be built. The speed is definately a downfall and to get from one task to another is very slow (supplies to work orders).

1590. It is hard to open ACCES from Internet, mostly I still use old version ACCES system.

1591. It would be a tremendous savings to the Air Force in $ and manhours, if these

1592. It would really be nice for the new program to be more user friendly for reports

1593. Item 2 - I supervise both supervisors and emmployees.

1594. it's a waste of time for us to do things manually. Let's make it work!

1595. IWIMS has a lot of problems, it seems like it is down more often than working.

1596. IWIMS may be able to do everything we need. The problem is not everyone knows all the neat things IWIMS is capable of doing (I am guilty of this myself) or the reports are too cryptic to be useful.

1597. IWIMS should "talk" to ACES, a lot of info I needed in ACES can not be accessed through IWIMS. Use one system or the other. Not 2 programs within the same squadron.

1598. IWIMS/CEMAS have the potential to be good systems if there where proper training available not just word of mouth

1599. job easier and more efficient, but if the information retrieved is incorrect,

1600. (name revoved)

1601. (name removed)

1602. Just a general comment. It's really frustrating having to be constrained by the IWIMS/ACES requirements. There are commercially available programs we could have purchased several years ago to help us manage our programs but

because we keep getting told to wait for ACES-FD we can't use them. So, here we are, years down the road with no usable system and still waiting for ACES-FD. And guess what, it still won't access/cross reference the other modules data as I understand it. So we'll still have to re-enter real property data ourselves for pre-fire planning and other tasks. My belief is that ACES-FD, when it does arrive in a usable form, will be of nominal benefit. I need a database system that is truely modern. I want to be able to build my own queries, build my own custom reports, export data to other programs like excel, access, or word. If I can't do that with ACES then we haven't progressed very far from our Wang WIMS days. In fact, as far as data access goes, we may have taken a step backwards. I've been a user and part-time administrator of CES database systems for 15 years and that's my two cents worth. Thanks.

1603. Just my 2 cents.
1604. Last CE data base I used was interim WIMS at Misawa as Ops CHief, from summer 97-summer 99. At that time, I depended on my deputy (CMSgt) and Production Controllers, and Superintendents to do most of the WIMS interface work.
1605. LISTING. MAYBE A MODULE THAT WOULD ARCHIVE PAST CSL'S THAT COULD BE RECALLED FOR
1606. Lots of nitnoid problems with ACES Environmental program. Quite often, cannot or hard to cancel an active project....in the process of trying to cancel, it gives "cannot change inactive projects" (but, it's not inactive to begin with!). Duplicates projects (takes project number and adds to alpha characters at end) on the Discover project listing, creating confusion and hardship in trying to figure out which of each pair of projects is the legitimate one and which one needs to be deleted, and of course, there's the problem of not being able to delete projects again. Overall, lots of problems with.
1607. Maintnenace Engineering is a full sized flight at Ramstein. I am the maintnenace engineering flight commander at this time. Although I personally don't use the database much, I supervise people whose work depends on it. If we had access to the Discoverer tool, we would use the database a billion times more. Currently, our base was only given 10 licesnses for this tool.
1608. more time to try to fix a system once it's installed than to take the time initially
1609. My answers probably do not satisfy your survey because I am currently assigned in a one-deep CE position on the HQ NORAD/USSPACECOM Staff. We do not have access to IWIMS, ACES, etc... However, in previous jobs, I have used them extensively.
1610. My comments would stray a bit from the questions asked. I support the current, in-progress, and any additional buisness rules in ACES-PM. I can't provide all that's needed off the top of my head but, business rules (some exist already) that require correct programming inputs. Pull-down menus of "if-then" restricts inputs and final outcomes are more correct. Business rules should follow requirements of programs such as FIM, IRR, etc. For example,

an RPM 522 or 529 project will prompt user to input all required fields for FIM data pulls with pull down selections in each case (i.e., have to enter cat-code and then limits it to one if FIM, etc.,etc.).

1611. My current job does not require me to use IWIMS/ACES, but I have in the past and the database has been essential in my daily activities (i.e. real property records as well as Resources and following up with engineering to ensure MILCON records were accurate). At the Air Staff, data has literally been pulled up, used within an hour and sent to the CSAF. The accuracy of this information in the PPBS process and advocating for essential AF O&M (as well as ENV, Housing O&M, MILCON) funding cannot be overemphasized. It is IMPERATIVE!!

1612. My name is Charles Tanner. I am a housing inspector at Eielson. Reference question 3 above. I use ACES on average 60 minutes a day. I have used computers since the early 80's and am very computer literate. I use computers daily in an online retail business and a computer repair business I run from my home. Oracle is a very cumbersome program to teach some one to use and makes ACES a very cumbersome program to operate.

1613. My overarching concern with the AF current and previous Real Property Maintenance database systems are there inflexibility of use, the slowness of using them due to bandwith limitations, the fact that there are consistently "bugs" in the system which drastically reduce the capability of the system, and the fact that they are continually outdated as new versions are published late. I've never understood why the AF has adopted all Microsoft desktop software in daily operations, except for the ACCESS application. A usable database system could go a long way in improving the ability to manage our resources yet the field is continually accomplishing "work arounds" to generate reports and present information that should be handled seamlessly by our database system. Airman would also become much more capable database users if we used the same software for all of our database needs. The opposite point could be made if we consider how less efficient we would be if there were several spreadsheet, word documentation, briefing presentation software packages being used throughout the AF. In addition, currently the great majority of the day-to-day management of project information is being done on homegrown EXCEL worksheets because ACES-PM is functionaly broke. The only time we use it is when we absolutely have to in order to move a project along (ie. entering a Ready to Advertise date so money will be released from the MAJCOM) and this becomes very frustrating when it takes minutes to input data that should only take seconds, assuming of course the system is up to begin with. When you consider that bases manage several projects at one time those minutes quickly turn into hours and days. Lots of frustration in the field and I wish you good luck in improving our systems.

1614. Need better report writing capabilities.

1615. Need better, more thorough training for the field--especially on business rules that affect data entry.

1616. no comment

1617. None

1618. not sure if you're asking the questions right. while i never go into as IWIMS or ACES, my job as sq/cc is directly impacted by the data, and my unit keeping the data current is essential to us receiving MAJCOM funding. however, if your goal is to talk to people who input data directly into the systems, you're right in not asking me.

1619. NUMBER OF LISTINGS, CODED FOR DELETE, NOT DEMAND SUPPORTED ECT. SHOULD BE REVIEWED

1620. Odd that you would pick only officers for this survey. Most AF data entry is done by enlisted and civilians.

1621. Of all the Civil Engineer career fields, Operations Management is relies heavily on the use of this database (currently IWIMS). I'm fairly confident in saying that 90% of our career field use IWIMS daily for at least 4-7hrs.

1622. Of course the Civil Engineers need a database. We just need something more streamlined, efficient, and updated. The ACES program is LAUGHABLE. The CE world feels that it will be years before it takes over for IWIMS, and when it finally does, it will not be what it should. Just get rid of this ancient IWIMS and give us something for the 21st century. Is this too much to ask?

1623. On the positive side, ACES is a great idea. Once all the bigs are worked out, it will be quite nice. There will be years of projects both O&s and O&M available at your fingertips. PMR reviews, straddle bids, POMs, etc will be able to be accessed from the Majcom without ever having to request the info from the bases, easing our level of "busy work". All that will have to be done is simply maintain the program. It is an excellent idea and if it ever gets up and running 100% it will be a very useful tool.

1624. One of the MOST annoying features of ACES-PM is that sometimes when I try to enter data in a field, I get an error message telling me that I can't enter that data until some other data has been provided. There are two problems with this situation -- First, if the prerequisite data is supposed to be filled in by someone else, then I can't fill in the data I'm responsible for until (if ever) the other person fills in the field they are responsible for. Second, (naturally a specific example doesn't come to mind right now)the error messages that tell one to provide "x" data before one can fill in the field one wants to fill in don't say what screen to find the mystery "x" field. My memory is very bad, but I will try to recall an exact experience. I believe I was trying to fill in the "NTP" field under the "Construction" tab. I got an error message telling me that I had to provide the name of the low bidder first. Since the low bidder is not necesarily the firm to whom we award the contract and I was unable to locate a field for the low bidder's name, I just left the "NTP" field (assuming I remember the problem correctly)blank.

1625. One other key, is that we're somewhat complacent in our development of ACES. We (CE community as a collective) have not put significant resources (dollars and manpower) into it's continual development. There's a growing list of database enhancements that are not considered day-to-day 'maintenance'... These improvements (like for IRR and FIM programs to work properly--

allowing programmers to access FIM and IRR info directly from ACES reports) will require significant additional funding. Not too many folks see the CE community putting large amounts of money back into it.

1626. Our ACES system is VERY slow, it takes me hours what should only take minutes. The system is a good one but just time consuming especially when I am kicked out of the system on a daily basis. There are still many bugs that need to be worked out.

1627. Our squadron is fairly unique. We are a small unit that covers all long range radar sites in Alaska.We work as both planners and workers, and are almost all staff and technical sergeants. We don't use IWIMs for tracking time, but heavily for planning and material aquisition.

1628. P/N'S BE USED EXCLUSIVELY WOULD SIMPLIFY THE INTERFACE BETWEEN CRAFTS/LOGISTICS/

1629. PERSON. THIS EFFORT IS REPEATED TIME & TIME AGAIN AS A TYPICAL YEAR GOES BY DUE TO

1630. Phillips: Check question 17. I think an "is" may be missing from the first sentence. Good luck on you study!

1631. Please contact me if I can help you any further.

1632. Please make all ACES module as web application. It could make it faster.

1633. Please send me a copy of results when the survey is complete to (name removed) Thank You

1634. Please understand that I gave the data base low marks in Q 4-9 because HQ does not use it. PACAF still uses spreadsheets. It is hard for me as a manager to justify large amounts of effort to keep it updated when we still have to manipulate the same data on a spreadsheet.

1635. programs were tested and all the bugs taken out before installing it out in

1636. RED HORSE does not have a standard information management system. We would better with exchange of information and tracking of projects if we did.

1637. Regardless on the outcome of this survey. I know that the Air Force has tested 4 diffrent work order management systems and amoung the four they are going to submitt the top two for a trial period of an undertermined time frame and pick the best one amoung the users. ACES, is not user friendly and will only take more man hours for Operations to perform there duties. Presently IWIMS/ACES do not allow the use of phone nimbers outside the US, USAFE/PACAF phone numbers configure diffrently.

1638. (name removed)

1639. Right now, we just input new information in the ACES, and correct the old information that was occurred when the information were transferred to the ACES. That's all we can do now due to time limitation. We want to create and input and organize the system, but but we need to learn how to do that, and don't have time. Very frastrated.

1640. ROUTINE USE. SERIOUS LOOK AT THE DIFFERENCE BETWEEN NOUNS AND ADJECTIVES. MANUFACTUERS

1641. Scrap ACES! It was another rip-off, get another system that works and DUHHHHHHH get a training program that works from the ground up. Too

many band-aids in ACES and every base does things different even with ACES. Aces has destroyed morale and frustrated everyone. I'm sure the creators are laughing about this big joke program. Give it to the Taliban it will stop them cold. This is one big reason to leave government service; it's stupid beyond belief. But obviously you know that or you would not need this survey. Hello!!!!!

1642. See above for biggest obstacle, no notification when projects updated/changed/validated, etc. from HQ to base level or internally at base level in ACES.

1643. Since I'm on the staff at 7AF, I don't use database systems.

1644. Software that helps/aids in environmental compliance with complex laws and requirements I believe is necessary . The goverment hiring practises that tends to hire the least or minimumly qualified people

1645. SOMEONE IN THE LOGISTICS/COMPUTER HIERARCHY DECIDING OF THE SIGNIFICANCE OF A

1646. Standard reports, to included FIM and IRR, should be built in.

1647. Survey seemed one sided.

1648. surveys suck

1649. System is adequate but operates too slowly.System is adequate but operates too slowly.System is adequate but operates too slowly.System is adequate but operates too slowly.System is adequate but operates too slowly.System is adequate but operates too slowly.System is adequate but operates too slowly. adequate but operates too slowly.System is adequate but operates too slowly.System is adequate but operates too slowly.System iSystem is adequate but operates too slowly.s adequate but operates too slowly.SysteSystem iSystem is adequate but operates too slowly.s adequate but operates too slowly.m is System is adequate but operates too slowly.adequate but operates too System is adequate but operates too slowly.slowly.System is adequate but operates tSystem is adequate but operates too slowly.oo slowly.

1650. System is slow, and frequently goes down. This is time consuming and hinders information access.

1651. SYSTEM WIDE. THE DATA BASE SHOULD BE PRE-COMPLETED IN MODULES SUCH AS MECH, ELECT,

1652. System(IWIMS)is adequate to perform my job, however it seems improvements could be made to make it more user friendly.

1653. system. Our job centers around IWIMS as a system to use. We don't have a choice on where to update our labor sheets, order material, RWP ect. The system would work for me if it were faster.

1654. Thank you for the opportunity to participate in the survey.

1655. Thanks

1656. The absolute key is USE. I'm the AMC ACES PM manager and have found very quickly that most of our 12 bases don't use ACES outside of the programming shop. This is a leadership issue, because commanders want the correct info immediately and don't care if their folks utilize other databases.

1657. The ACES program we currently use on a limited basis is going to cause significant problems if implemented as it currently exists. We use it only for the building manager program, and I cannot imagine trying to use it for work control if it continues to take as much time as it does now to complete a transaction and enter data into the system. I have never seen a system so slow, including the antiquated and no longer available BEAMS system where everything had to transmit to the mainframe at Data Automation before it would accept.

1658. The ACES system has many defficiencies. The worst part is the reliability and the speed of the system. The system crashes frequently for some reason or another. The biggest problem is the speed. Apparently, the Yokota network is connected to Gunther AFB. This creates a big problem because of the tremendous distance the signal has to go to communicate with. It realy is a slow system. In my opinion, that is why so many people in the squadron don't input the currant data in the system. It is just to time consuming to try and keep acurate information in.

1659. The ACES system is too slow.

1660. The ACES system is very unreliable. It takes an extremely long time to update information and the system constantly disconnects from the server.

1661. The ACES systems is not compatable to current Air Force formats and will not allow any reports to be printed from the web base program. These include funding actions and programming 1391 documents.

1662. The ACES-PM is Very important management tool CE...Its not user friendly and very very slow in processing...Yesterday it took me one hour to add a new record and average 20 - 30 minutes for record update/modify...That is way to long for everyone...Even running reports thru Discovery..Its to long

1663. The biggest problem I have incurred is not with the data base, but with the lack of formal training on the data base. Currently I have UK personnel working for me and they have not had any training on the system. What they have learned is from USAF personnel that haven't had any formal training or they have learned from trial and error. I believe the current system would work alot better for everyone if formal training was provided.

1664. The biggest thing with ACES and WIMS is that they don't talk to each other, and Civil Engineering is split using the two. Therefore Ops is talking about Work Orders and WIMS while Engineering is talking about projects and ACES. Makes customer service difficult sometimes. Need to integrate everything to ACES soon.

1665. The correct data is supposed to be collected, but folks don't always input all the information...sometimes making the database useless. I doesn't help that half the squadron is using WIMS and the other half is using ACES either. Also doesn't help that ACES data can be altered by anyone who views it (BIG TIME MISSTAKE TO NEGLECT HAVING A DEVICE THAT ALLOWS FOLKS TO VIEW WITHOUT EDITING!!!) If a modification to the database software has occurred to better safe the informaiton in the database from being corrupted just by human error, please pass it out.

1666. The current way that issued items are put into ACES that be made to be a little easier. instead of doing three transactions for isseue, we should be able to do one transactions, same as how we do the turn-ins.

1667. The data that is collected by the VUWIMS database doesn't always seem to be correct. There have been many times, I have ran reports back to back and have gotten different figures. Talking with the folks at Gunter AFB, if they can reperciate the problem then it doesn't exist. A good example is the RWP program. I've been told not many bases are using the RWP program, but I can tell you I've been at 3 bases in the past 3 1/2 years (different commands) and we used the RWP program at everyone of them, so I don't know who's not using it. The numbers in the RWP program just don't add up, I use the RWP program to get my scheduled items. But to get actual numbers, I have to do a manaul count. You just can't trust the numbers in the system.

1668. The database system is good... it can be improved even more. It is to slow to run reports thru Discoverer 3.1.... We end up using our own database in Excel. Would be nice to have a cross reference cheat sheet showing fields for report building....thru dicoverer you have to dig so deep to find a field.

1669. The development of ACES-RP was initially designed for the CFO Compliance. Consideration in developing this ACES-RP was not given to real property accountability, as it was more designed for the Finanacial Management side. Because of this, the transition between IWIMS and ACES-RP did not go well. Many of the real property data and control was lost. Example is the General Ledger. Under IWIMS, we had to balance the general ledger with vouchers input to insure the correct GLAC were used. Now under ACES-RP, the transaction is done automatically, and who knows what GLAC was credited. Also, under ACES, a change to a facility characteristics, i.e. SF, category code, etc., creates several different journals and it makes it difficult to see what was actually changed and what journal number to use (parent journal # or journal #) to reference the change. Also, the various ACES programs, do not talk to each other, which makes it incompatible when data is needed. Need to make ACES-RP more towards the real property management than financial management.

1670. THE FEDERAL SUPPLY SYSTEM TO CEMAS IS GENERALLY A NON PRODUCTIVE ENDEAVOR. AGAIN LET

1671. the field. Not all bases have the same requirements, and we need to take a look

1672. The housing/dormitory portion of your module would not let us update airman's information in the ACES database I.E. Squadron, Rank, SSN, So we stopped using it. I would like see module work for the dorms(ACES) The database we are working with is a in-flight developed ACCESS program.

1673. The IWIMS program is so old that not many people understand it enough if there is a problem. For example, updating or creating new RWP items can be difficult when dealing with all the codes associated with it. IWIMS is not very user friendly with help menus either.

1674. the iwims system i have used is pretty good. at this base we get our money's worth. the difference is the way we integrate it into our daily work processes. at my last base no one made updates and used the system as they could/should have. so they were not able to get a lot out of it. however, i will say that the training given for iwims was not adequate. there's no manuel or text to follow. i know we are switching to aces, but it's still possible to make the same mistakes training wise.

1675. THE IWIMS SYSTEM NEEDS TO BE UPDATED. IT LIKE AN OLD DOS SYSTEM. TO MUCH MOUSE WORK. WHEN YOU ENTER A WORK ORDER, YOU HAVE TO USE THE MOUSE TO GET TO THE NEXT LINE. YOU SHOULD BE ABLE TO TAB TO THE NEXT LINE.

1676. The IWIMS system we use is just more work. Our job requirements are maintained at the shop. The database has to be manipulated to match what we do.

1677. The login process is very unforgiving. If I make a mistake, I can't backspace or type over the password before I press enter.

1678. The main drawback of the ACES-PM is it's too slow in retrieving data. A lot of valuable man-hours are wasted just waiting for the data to be retrieved. I'm sure if a study is done on the man-hours lost Air Force wide, its a substantial amount. This problem needs to be solved.

1679. The major complaint that I have is that the system response time is too slow.

1680. The one thing better with the new system/database is the writing of reports which is easier to import to MS Word/Excel. The access speed for input/retrieval of data with ACES is way too slow making the system less utilized than it might/should be. Another item is the number of fields, too many and descriptions need to be better.

1681. The only reason I would have to use these two programs is for the tracking of Impact purchases which I dont. Adding this information to another location is only more work in an already over tasked shop.

1682. The report process seem's a bit lengthy and non-user freindly

1683. The report writing tool used, Discoverer, is pretty good and simple to use but still has some limitations I would like to see improved. Tried a query not long ago and a message said it would take 30 minutes to complete. I executed it but the system timed out and kicked me off before I could get the results.

1684. The request I received to complete this survey looked like I was sent to officers only. As the Ops Flight Commander, I virtually never get in the data base, but my production control folks use it all the time to get me answers or supporting documentation for issues I work at my level. At least for WIMS/IWIMS, they are the target audience you need to be directing this survey to. I forwarded the survey request to my production control chief, superintendents, and shop chiefs to provide their input.

1685. The survey should ask for input on the job of the person completing the survey. An engineering flight chief will have different answers from a project programmer or real estate specialist, etc. Then you could check for

commonalities among responses from those doing the same job a different bases.

1686. The system to create reports (Oracle Discoverer) works well, the only problem is to find the information you need to pull out of the database. It is hard to tell where to find the data because the designators are not always obvious. We need a guide showing us which folders have what data in them and what the designator code is (what they are named). Otherwise, ACES works so much better than the old IWIMS system did. I like the new Windows format.

1687. The web based ACES is still slow and not that responsive. It takes a while to update several projects. Also, as stated above, I think it should include more SABER related tasks. PCMS and new ACES is designed more for traditional contracting process. SABER is and has been a key part of Engineering and a popular execution method for many installations.

1688. The web-based database is extremely slow. Only one search can be conducted; to accomplish another search, you must exit the database and re-enter. Discoverer needs to be integrated with the web-based database to avoid the license issues involved with having it loaded locally on workstations. It would be very nice to be able to use the record to record arrow keys when inside a record.

1689. There is search function missing to find projects where there is a contract number assigned .

1690. There should be a menu bar instead of Function keys so that people don"t have to go through so many screens to check things Exp.cheaking bill of materials status is about 7 function keys that you have to wait about 1-3 minutes before each screen (7x3=21min) a menu bar could take you directly to the screen in 1-3 min and it would be a one time deal. plus there is a issue about a screen that pops up talking about a copy has been found and it stops progress.

1691. This deals with the web-based ACES-PM...allowing the user to change his/her password on the web-based version would be helpful, rather than having to go to the administrator, or find a client-based version of PM.

1692. This program is extremely slow when it is working, is extremely difficult to use involving far too many steps for inputing as welll as retrieveing information. It requires far too many man-hours to utilize.

1693. THOSE THAT NEED TO DO THAT, "DO THAT". IF YOU WOULD LIKE TO DISCUSS MORE "UNFRIENDLY"

1694. Time consuming - Inputs are slow. It seems that the IWIMS system and the ACES system don't always communicate to each other. The FAB team at Gunter has been wonderful in resolving any problems that I have run across.

1695. time it takes just to run a daily job sheet. I wish something was done to update our

1696. To do this will require some bucks though as there are going to need to be lots of systems upgrades. Servers, wiring, computers, etc. One thing that for sure must happen is there needs to be a central main frame for each MAJCOM at least! Gunter is not good enough for us here in PACAF, or EUCOM, or

anywhere overseas that does not have a dedicated line to Gunter. Stateside I have heard it is slow as well, but here in PACAF, the creator of ACES has even said it is the slowest he has ever seen.

1697. User guide and help menus could be much better

1698. very slow

1699. We are forced to use IWIMS which is very slow. It slows my job down everyday due to the

1700. We are told there will be a much easier version out soon. when will; this happen I have been here for 5 months and no one has ever used this system and if they did then they stoped.

1701. We do not use the database since I am in the Readiness section at HQ USAFE. Good luck on your thesis!

1702. We feel Real Estate stepped backwards with ACES. IWIMS could have improved because all data were on two screens, and we could have used a few more data input blocks. But in ACES, there are so many separate screens to update with the same amount of data on IWIMS two screens. And if you don't remember to update one of the screens, we think it could have future consequences. Then in IWIMS two pages reiterated the changes/additions/deletions. In ACES it could run as high as 10 pages. Where do we file all these transactions? In IWIMS you could somewhat tell what transaction was done by someone by looking at the two pages. In ACES, who knows?....too many pages. Same thing for the transaction journal...too much unnecessary info to sort through. And because ACES has many screens, there seems to be a repetition of data. And please improve the Oracle program. Just to run a report you have to run through a maze to find what you need...can't it be easier? But recommend that before anyone does anything more to ACES, they work with the folks who ACTUALLY work with the program on a daily basis to find out what are Real Property requirments.

1703. We have a good database system that needs to be properly funded and maintain throughout the ILE community. I see a trend to usage ACES-PM more for FIM and IRR. We need a responsive system to keep our CE folks energized to use it.

1704. We have an ACES program that we use to maintain some data, but it's not utilized to any great degree. The program is not user friendly when creating reports and extremely slow when generating reports or quarrying information. It's available to the whole unit but, to the best of my knowledge, nobody else accesses our data; hence we're really our own customer when it comes to maintaining the information. An excell spread sheet accomplishes most of our internal needs to tracking projects and information.

1705. We have been directed to use Web ACES rather than the much more responsive Client ACES.

1706. We in AMC/CE are trying to identify fields that we want the bases to fill. With this info we will be running project execution meetings with the higher ups.

1707. We need a system that is speedy and accessible at all times and does'nt slow everyone up in the daily mission.

1708. We need to complete the modernization of CE database systems that was started many years ago now. The data system is outdated and does not effectively interact with many of the other computerized tools we have today like CAD/GIS. Getting data out of the system and navigating the system to find the information you need is difficult at best. We can do better and make a more useful/effective system/tool for our controller, superintendents, Ops Chiefs, etc.

1709. We, currently, are using IWIMS and switching making a gradual switch-over to ACES. ACES seems to be a lot slower going from screen to screen.

1710. When a work order is initiated and placed into IWIMS, it is no longer accessible to go into the project file to find applicable work order number. When project is loaded into ACES without applicable work order number, IWIMS is of no help. Also should have only one person, the programmer, create a work order number as finding numerous individuals creating work order numbers complicating the process.

1711. When I purchase some office items, I input the info to CEMAS (IWIMS). But at same time,

1712. When is ACES coming on-line to be used by 3E6XX's?

1713. when working with a particular document number, It would be very helpful to have the work order number print out at the top of the sheet. I deal with a large number of work orders on a regular basis, and the time I spend running inquiries on a specific document number, can be better spent elsewhere.

1714. Why do CSL's that haven't been procured in over a year get deleted? The item doesn't change so why should the CSL? Can we incorporate at the shop or flight level, a category that would keep a CSL? Additionally, an idea that might improve the system without altering the program would be to assign one person of the major CE AFS's to the material acquisition flight.

1715. WHY WHEN TAKING A SURVEY, QUESTIONS ARE ASKED IN THE SURVEY THAT DON'T EVEN PERTAIN TO THE SURVEY, AND THE SURVEY IS GETTING MORE PERSONAL THAN NEEDED. I KNOW MOST SURVEYS ARE BROKEN INTO DIFFERENT SECTIONS SUCH AS MALE-FEMALE, AND THE AGE RANG AND SO ON AND SO ON, BUT WITH THESE NONE OF THAT SHOULD MATTER. THE MAIN POINT IS STATED ABOVE.

1716. Why would you put untested and unreliable software in use, isn't that akin to placing an untested unreliable weapon in the front lines of defense?

1717. Work orders have to be closed automatecally if the project is closed.

1718. WORK. THE BASIC CONTENTS OF THESE MODULES SHOULD REFLECT THOSE ITEMS THAT ARE

1719. Would be nice to be able to punch in some other fields during query to locate projects or utilize a search tool.

1720. Would like to see the work order module completed in ACES. I think it should be left as a GOTS. The system works why change. Just need to add

some of the bells and whistles that have developed over the years. Need to do this before the people that know how IWIMS works retire.

1721. You clearly have little experience with base level engineering.

1722. You probably won't get many responses from EOD personnel about this database because most of them don't consider it a CE database (when in actuality it is, the program is developed by AFCESA)..they think of it as an "EOD database", separate from CE. May be you could send out a request to EOD personnel to specifically identify problems they are having with this particular program.

1723. Upon further consideration, there is one search capacity I would like to see added to IWIMS or ACES. When in CEMAS, and looking through materials on Residue by Noun, it would be more convenient if a list like the one in Noun Dictionary Inquiry could generated, rather than having to see one CSL at a time. Other than that, my survey answers are, to my knowledge, complete. Thank you for any convenient opportunity you have to reply.

VITA

Edward Phillips was born in New York City and attended Brooklyn Technical High School. There he majored in Aeronautical Engineering and received an appointment to the United States Air Force Academy. A Bachelor of Science in Civil Engineering was earned upon completion of his studies. Newly commissioned Lieutenant Phillips attended Undergraduate Navigator training at Pensacola Naval Air Station where he graduated Primary Navigator training. True to his engineering roots, Lieutenant was assigned to the 305th Civil Engineer Squadron, Air Mobility Command at McGuire Air Force Base. While at McGuire Air Force Base he earned the rank of Captain and held the following jobs: Chief of Military Construction/Base Realignment and Closure, Deputy Chief of the Engineering Flight and Chief of the Civil Engineering Resources flight. Captain Phillips was invited to attend the Air Force Institute of Technology to earn a Masters of Science in Engineering and Environmental Management. This assignment was in preparation for his next duty as an instructor at the Civil Engineer and Services School.

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14. ABSTRACT
Almost every organization has some form of information system where data is captured and stored for later use. The Air Force civil engineering organization is no exception and is in the process of transitioning from the Interim Work Information Management System (WIMS) to the Automated Civil Engineer System (ACES). This research focused on users' perceptions of both database and data importance to determine if significant differences existed between various user sub-groups. The research also attempted to identify the most frequently reported problems regarding system usage. The methods of analysis of variance and content analysis were used to answer the research questions using survey responses from a sample size of 814. The results indicate that civil engineers "slightly agree" that their database and the data it collects are important. However, significant differences in perception levels were found between men and women, between some major commands (MAJCOMs), between users of different systems, and between personnel of different rank. Content analysis of comments in response to open-ended questions found that users are generally satisfied with their current system. However, areas of concern included slow system speed, lack of a user-friendly report writing feature, and poor reliability.

15. SUBJECT TERMS
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